ORDER NO. VRD9511M156

Service Manual

Video Cassette Recorder

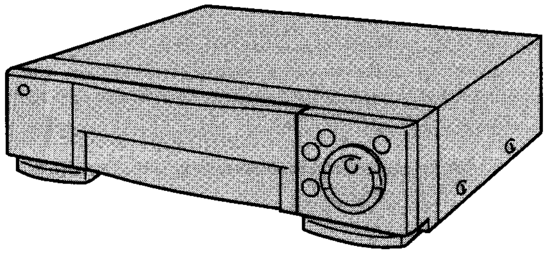
Panasonic S-VHS VHS PAL 625

Hi-Fi HQ

NV-HS900EG

K-MECHANISM

General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	SOURCE: 220−240V AC 50/60Hz
	CONSUMPTION: 25 watts
RECORDING SYSTEM	2 rotary heads, helical scanning system
	PAL
TV TUNER SYSTEM	VHF I: CHN1~CHS10 VHF III: CHE5~CHS41 (PAL/SECAM B) UHF: CH21~CH69 (PAL/SECAM G) 75Ω terminated
RF OUT SYSTEM	UHF: 36±6 (PAL/SECAM G) 70^{+2}_{-3}dBμ, 75Ω terminated
VIDEO	HEADS: 4 rotary heads 1 pair for SP recording, playback and trick play (L-R heads) 1 pair for LP recording, playback and trick play (L′-R′ heads) 1 flying erase head
	INPUT: EURO AV (AV1, AV2) Connectors (21 pin) 1.0Vp-p, 75Ω unbalanced S-VIDEO IN (AV3) Connector 1.0Vp-p, 75Ω unbalanced VIDEO IN (AV3) Connector (Phono type) 1.0Vp-p, 75Ω unbalanced
	OUTPUT: EURO AV (AV1, AV2) Connectors (21 pin) 1.0Vp-p, 75Ω unbalanced S-VIDEO OUT Connector 1.0Vp-p, 75Ω unbalanced VIDEO OUT Connector (Phono type) 1.0Vp-p, 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal Audio) 2 rotary heads (Hi-Fi 2CH)
	INPUT: EURO AV (AV1, AV2) Connectors (21 pin) More than −6dBV (500mV), More than 10kΩ AUDIO IN (AV3) Connector (Phono type) More than −10dBV (316mV), More than 47kΩ MICROPHONE JACK −70dBV

ITEM	SPECIFICATION
AUDIO	OUTPUT: EURO AV (AV1, AV2) Connectors (21 pin) −6dBV (500mV), Less than 1kΩ AUDIO OUT Connector (Phono type) −8dBV (400mV), Less than 1kΩ HEADPHONE JACK −30dBV, 8Ω
	TRACK: 1 track (Normal-mono only) 2 channels (Hi-Fi Sound-Stereo)
TAPE FORMAT	S-VHS, VHS Cassette tape (Tape width 12.7mm)
TAPE SPEED	SP: 23.39mm/s (PAL), 33.35mm/s (NTSC) LP: 11.695mm/s (PAL), 11.12mm/s (NTSC) Record/Playback Time: SP: 4 hours with 240min. type tape LP: 8 hours with 240min. type tape FF/REW Time: 2.5min. with 180min. type tape
OPERATING TEMPERATURE	5°C−40°C
OPERATING HUMIDITY	35%−80%
DIMENSIONS	430(W)×107(H)×329.5(D) mm
WEIGHT	5.0kg
STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. Infra-red Remote Controller 1 pc. Audio Cables 1 pc. AC Mains Lead 1 pc. S-VIDEO 4P Cable 1 pc. Edit 5P Cable

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

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⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.
Section 1 presents you with technical know how for actual servicing and general information of features and controls, enabling you to become familiar with each function.
Section 2 presents to your mechanical and electrical adjustment information as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to the appropriate service manual.
Section 3, 4 contains block diagrams which provides you with information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c. ...
Section 5 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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SECTION 1
GENERAL DESCRIPTIONS

1-1. SERVICE INFORMATION

1-1-1. CHANNEL MEMORY IC INITIALIZATION

When replacing the channel memory IC6702, its IC should be initialized.

Note:
1) It should be performed before tuning.
2) Meaning of "INITIALIZATION" is to make dependency in different models and to distinguish between different features.

Method:
1) Connect a jumper wire between TL SERV and TL TEST as shown Location of Test Points & Controls (Page: 2-4).
2) Turn the Shuttle Ring to FF then push the Eject button to set the Service Mode (Test Mode will be appeared on the monitor TV.)
3) Set the Model Code for this model by using 10-key on the Remote Controller Unit as follows.
4) After finishing the initialization, and cancel the Service Mode.

		NV-HS900EG
Code No.	IR	161

Note:1) Set to IR No. when there is OSD button on the Remote Controller.
2) Set to OSD No. when there is not OSD button on the Remote Controller.

1-1-2. SERVICE POSITION

A. CHECKING OF MAIN C.B.A.

When servicing the MAIN C.B.A., take out the MAIN C.B.A. and mechanism from the frame and turn over.

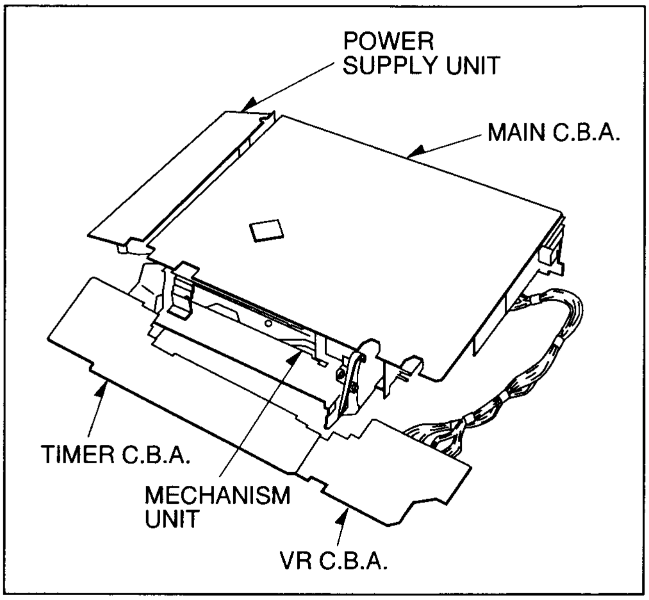


Fig. S1

B. MECHANISM SERVICE POSITION

When servicing the K-Mechanism, take out the mechanism from the MAIN C.B.A. and connect Extention Cable (VFK0889) between the loading-motor connector and P2001 as shown below.
In this position, the following services are possible.

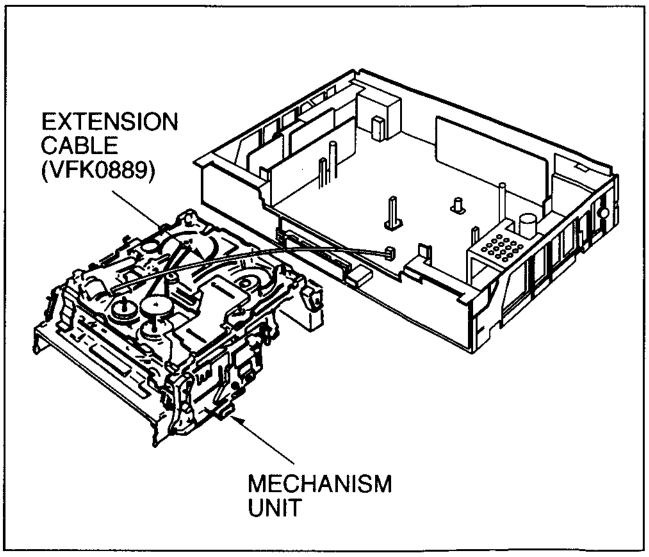


Fig. S2

B-1. CHECKING OF GEAR PHASE ALIGNMENT CONDITION

1) Check gear phase Alignment Condition of Mechanism.

B-2. CHECKING OF LOADING/UNLOADING OPERATION

There are 3 methods for manual operation of loading/unloading operation as follows.

1. HAND OPERATION
   1) Turn the Worm Gear or the Worm Wheel Gear (Remove the Loading Motor Unit) manually.

2. BATTERY OPERATION
   1) Remove the Extention Cable (VFK0889).
   2) Connect the Battery (Manganes-Type R6 (AA) 3pcs./+4.5V) to the Loading Motor terminals.

3. SERVICE INFORMATION DISPLAY OPERATION
   1) Set the Service Information Display mode. Turn the Shuttle Ring to FF then push the EJECT button.
   2) Turn the Shuttle Ring to FF then push the EJECT button 7 times to set the Service Mode 7. (The end of display on the Display becomes "--".)
   3) In the above Service Information Display mode, the Loading Motor rotates for Loading operation when the "PLAY" button is pressed.
      The Loading Motor rotates for unloading operation when the "STOP" button is pressed.

Remark:
Use the "SERVICE INFORMATION DISPLAY" mode for a final check of mechanism movement.

B-3. CHECKING OF REEL GEARS OPERATION

1) Move the mechanism to "PLAY" position by loading operation. (Refer to B-2)
2) Turn the Capstan Rotor Unit to check movement of reel gears.

1-1-3. POWER SUPPLY UNITs SERVICE POSITION

Use the extension cables when checking.

PART NO.	PART NAME	PCS	CONNECTION
VFK1140	11-PIN WIRE CABLE	1	P1001 (MAIN) – P1102 (POWER)

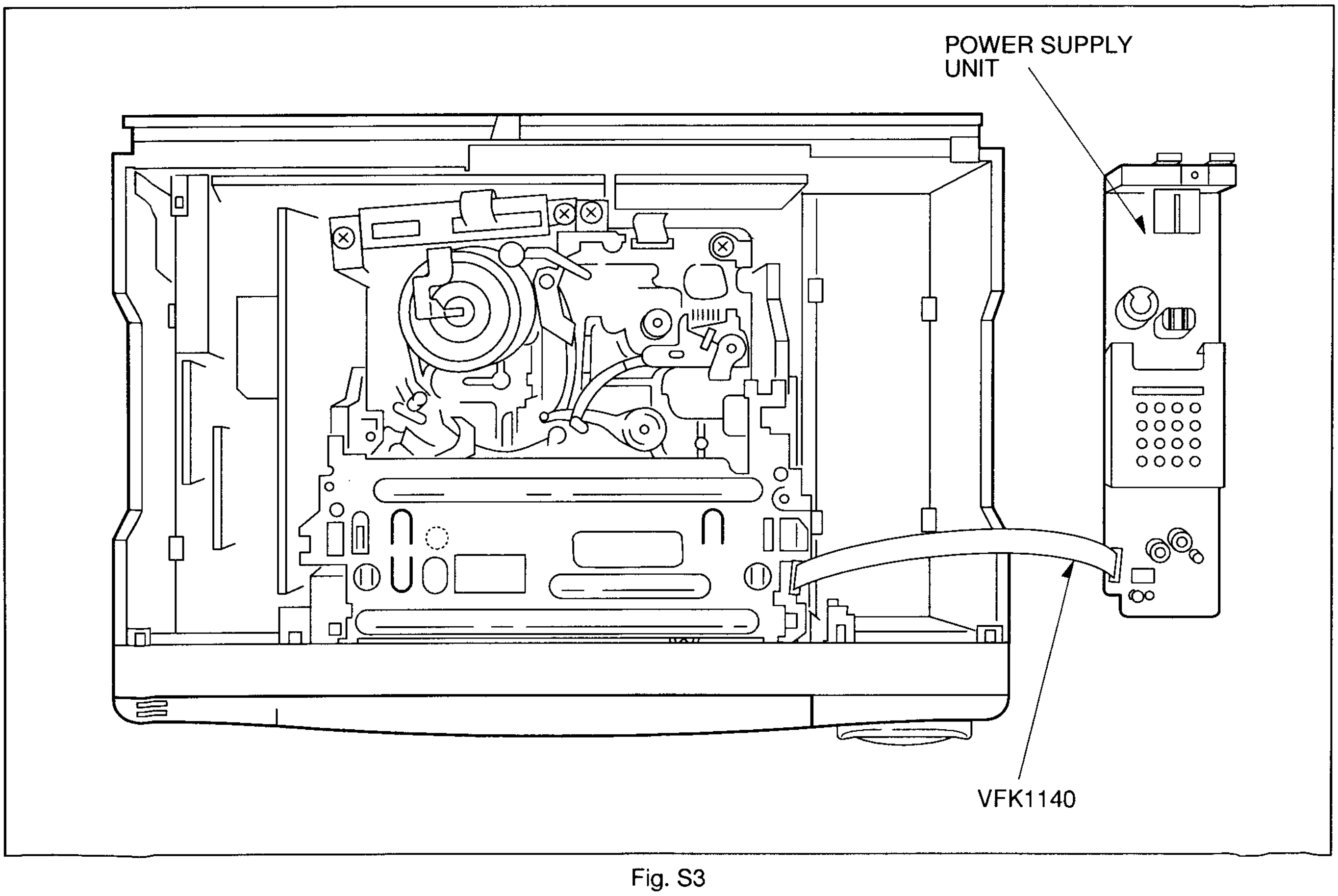


Fig. S3

1-1-4. UPPER CYLINDER REPLACEMENT

A. NEW GLDD CYLINDER

1) GLDD and New GLDD Cylinder
The construction of New GLDD Cylinder has been designed simpler than GLDD Cylinder, and the general performance has been improved.
2) The difference between GLDD Cylinder and conventional cylinder.
   (1) GLDD has improved linearity, higher stability of head revolution with oil sealing and higher serviceability with the simpler structure.
   GLDD and New GLDD Cylinders are used for step-up range VCR.
   (2) GLDD enables less working time to replace upper cylinder unit and cylinder unit due to the following reasons.
      1) No Soldering
      2) No Screws
   Please refer to "Upper Cylinder Replacement" for the detailed replacement procedure.

Note: "GLDD" cylinder stands for the following.
G: GLDD has been developped and introduced from VCRs using G- Mechanism.
LDD: Liquid Direct Drive.

B. UPPER CYLINDER DISASSEMBLY

1) Remove the Top Panel.
2) Remove the Screw (A) and Earth Plate.
3) Lift up the Upper Cylinder.

Note: Do not remove 3 Screws on the Upper Cylinder.

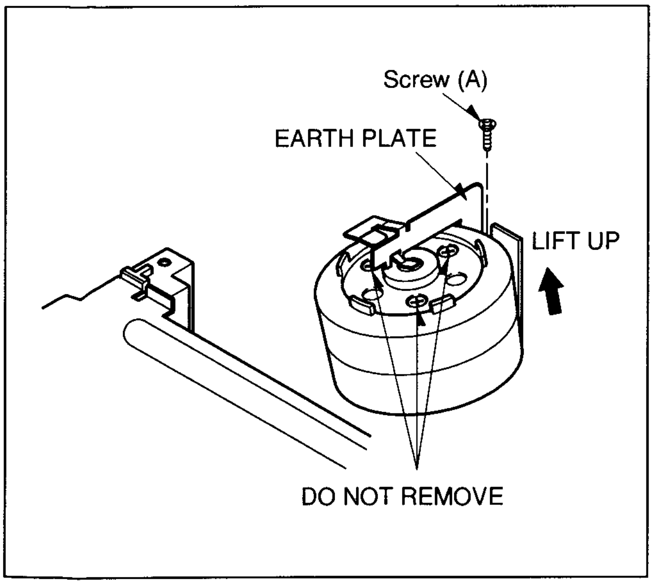


Fig. S4

Do not remove the Rotor Magnet which fixed by 3 screws on the Upper Cylinder.

If it is removed, refer to following method.

1) Install the Rotor Magnet so that the hole (C) on the Rotor Magnet fits to the small projection (D) on bottom of the Upper Cylinder.
2) Tighten 3 screws on top of the Upper Cylinder.

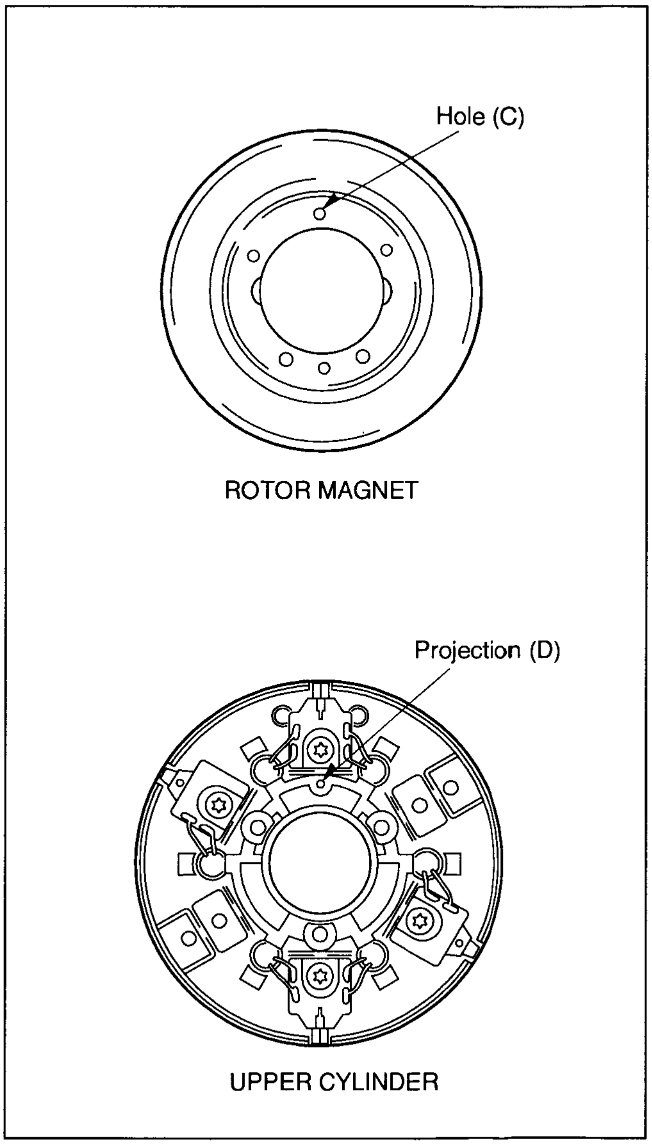


Fig. S5

C. UPPER CYLINDER ASSEMBLY

When reassembling, perform the steps in the reverse order of the DISASSEMBLY METHOD.

1-1-5. NEW GLDD CYLINDER UNIT REPLACEMENT

The Cylinder Unit can be replaced easily by the following method.

1) Remove the Top Panel.
2) Remove the Front Panel Unit.
3) Remove the Mechanism Unit.
4) Remove the Screw (A) and Earth Plate. (Fig. S4)
5) Remove the 3 screws (E) of the Cylinder Unit with a magnetized screw driver.

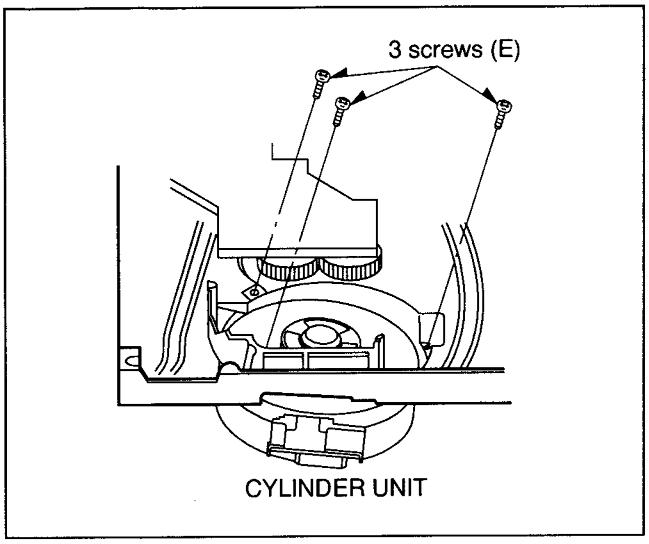

3 screws (E)
CYLINDER UNIT

Fig. S6

1-1-6. FLAT CARD CABLE INSTLLATION

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

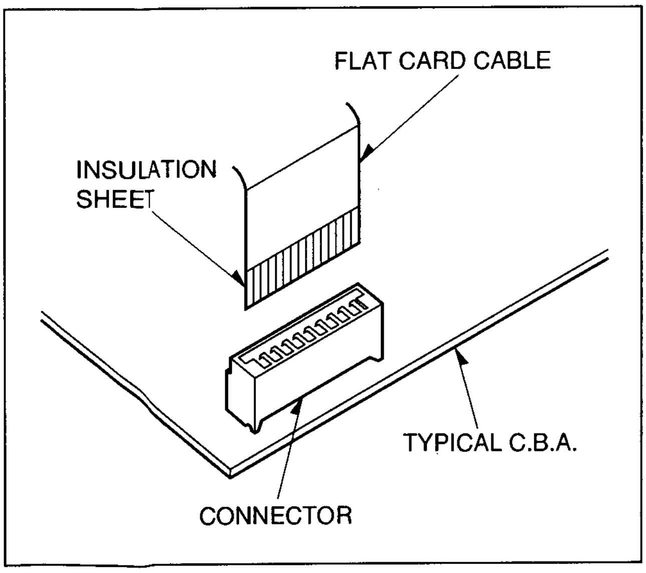

FLAT CARD CABLE
INSULATION SHEET
TYPICAL C.B.A.
CONNECTOR

Fig. S7

1-1-7. CAPSTAN STATOR UNIT ASSEMBLY

When replacing the Capstan Stator Unit, the Centre Fixing Tool (VFK0851) must be used to fix the centre of Capstan Stator Unit.

Method:

1) Place the Capstan Stator Unit into position.
2) Loosely tighten the 3 screws.
3) Insert the Centre Fixing Tool (VFK0851) as shown below.
4) Tighten the 3 screws.
5) Remove the Centre Fixing Tool.

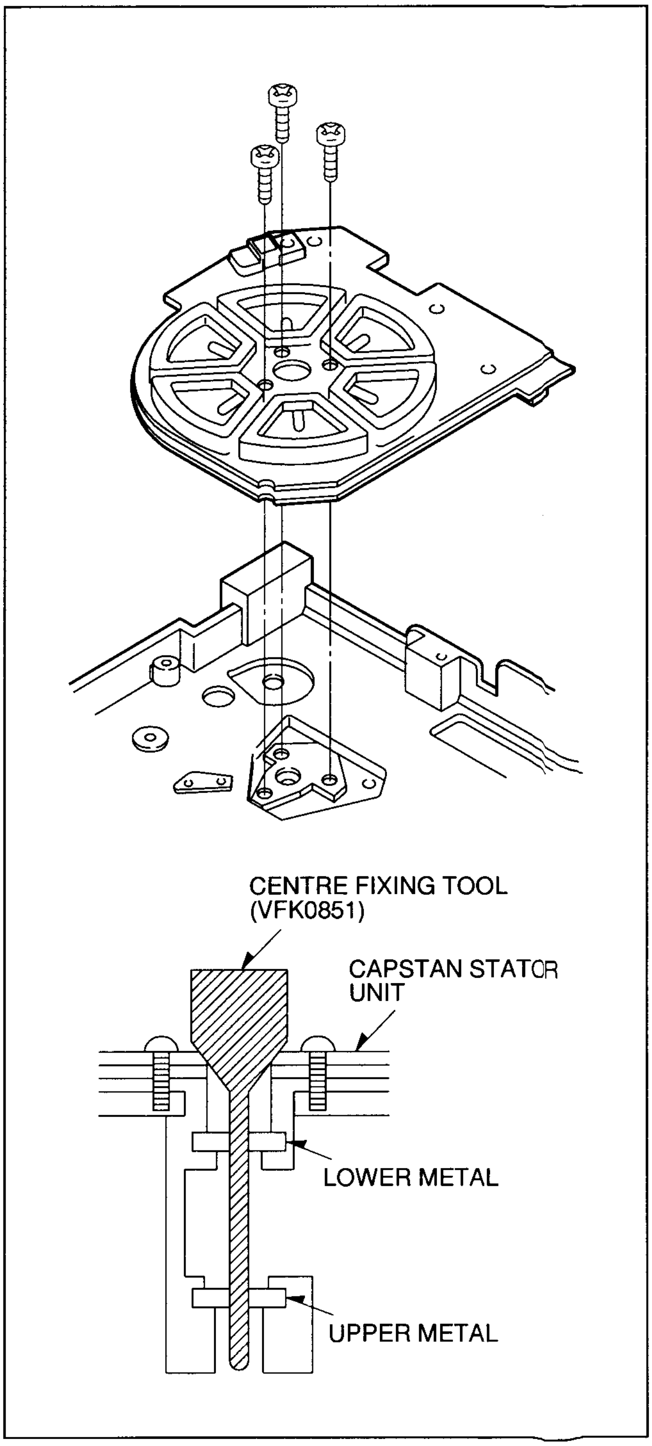

CENTRE FIXING TOOL (VFK0851)
CAPSTAN STATOR UNIT
LOWER METAL
UPPER METAL

Fig. S8

1-1-8. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear and will not rotate.
To perform the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

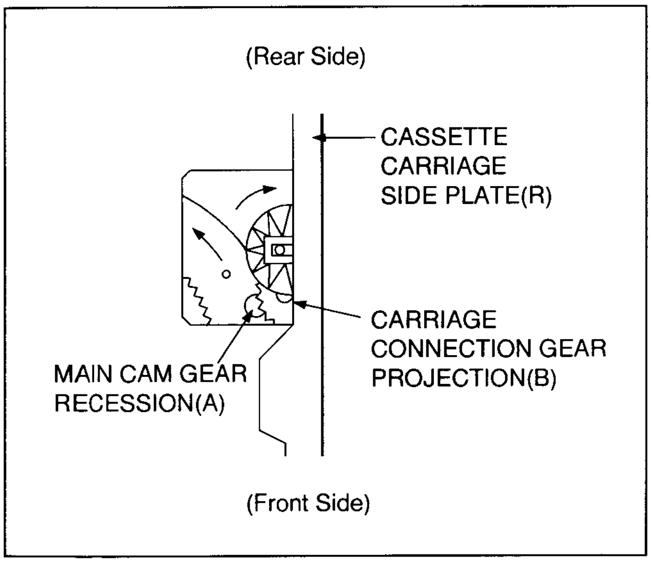

(Rear Side)
CASSETTE CARRIAGE SIDE PLATE(R)
CARRIAGE CONNECTION GEAR PROJECTION(B)
MAIN CAM GEAR RECESSION(A)
(Front Side)

Fig. S9 Top View of Eject Operation

1-1-9. TAKE-UP PHOTO SENSOR OPERATION

Note the following matters for Take-up Photo Sensor Operation.

1) While servicing of the K-Mechanism, the unit will not operate properly if a strong light (ex, Fluorescent light, Spot light) falls on the Take-up Photo Sensor. In this case, cover the Take-up Photo Sensor to prevent the light from falling on it.
2) While servicing of the K-Mechanism with "Power On" and without cassette tape inserted, the Unit does not operate properly.

1-1-10. REMOVAL OF THE CASSETTE TAPE

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to remove the cassette manually. There are 2 methods of removing the cassette.

1. HAND OPERATION

1) Take out the mechanism from MAIN C.B.A.
2) Turn the Worm Gear manually, moving the Loading Post to the unloaded position.
3) Turn the Capstan Rotor Unit clockwise to take up the tape.
4) Turn the Worm Gear again to eject the cassette.

2. BATTERY OPERATION

1) Take out the mechanism from Main C.B.A.
2) Connect the Battery (Manganes-Type R6 (AA) 3pcs./ +4.5V) to the Loading Motor terminals as shown below.
3) After moving the Loading Post to the unloaded position, disconnect the battery to stop the motor.
4) Turn the Capstan Rotor Unit to clockwise to take up the tape.
5) Reconnect the battery to eject the cassette.

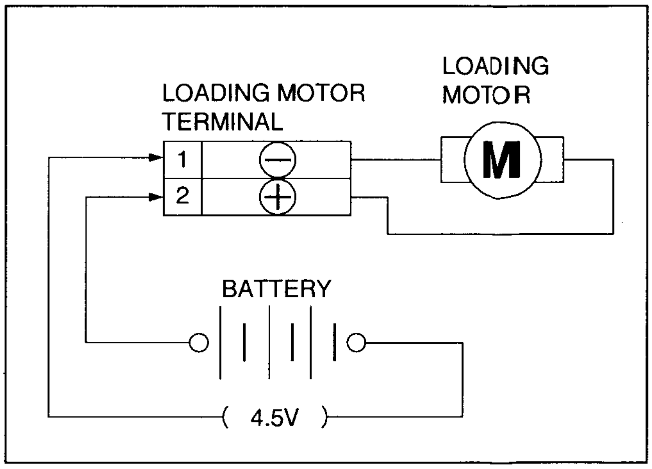


Fig. S10

If the cassette tape can not be removed by the above 2 methods, remove it by the following method.

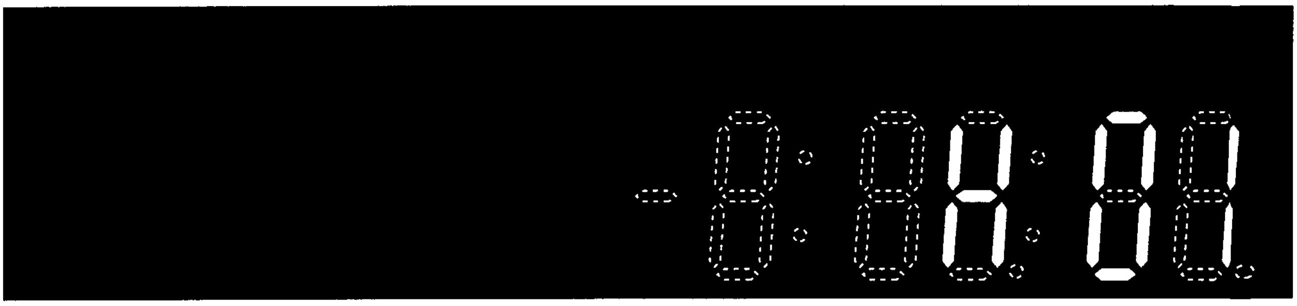
1) Remove the Top Panel.
2) Remove the Front Panel Unit.
3) Lift up the Pinch Arm after removing spring.
4) Push the P5 Arm and remove the cassette tape from tape transportation (P1, P2, P3 and P5 Posts).
5) Turn the Capstan Rotor Unit to take up the tape.
6) Remove 1 screw from the Side Plate (R) Unit to disconnect the Rack Gear from the Carriage Connection Gear.
7) Take out the cassette tape from the Cassette Compartment.

1-2. SELF-TEST INDICATION DISPLAY

This VTR has a self-diagnosis and display function. If the VTR detects trouble during installation or during use, one of the following Fault Indication Codes will automatically appear in the VTR display. Fault Indication codes are displayed in the form of a single English letter followed by two numbers, as for example "H01".

Note:1. The indication "U" is displayed on the FIP while power remains on.
2. Otherwise, the indication "H" or "F" is displayed on the FIP, and the power is automatically turned off. When the power is turned on again, the Fault Indication Code will disappear and the unit will return to normal display mode (either clock or counter).
3. This Fault Indication Code will be stored in the Timer microprocessor even with the AC plug disconnected.
The two-digit number portion of the stored Fault Indication Code can be redisplayed in the FIP's "second" display position (the last 2 digits on the light) by placing the unit is Service Mode Number 2 when turning on Service Information Display as for example "01" or "02" etc.
If a second error occurs, only the most recent error will be displayed and stored.
4. To erase the stored Fault Indication Code data, Turn the Shuttle Ring to FF then push the EJECT button for 5 seconds.

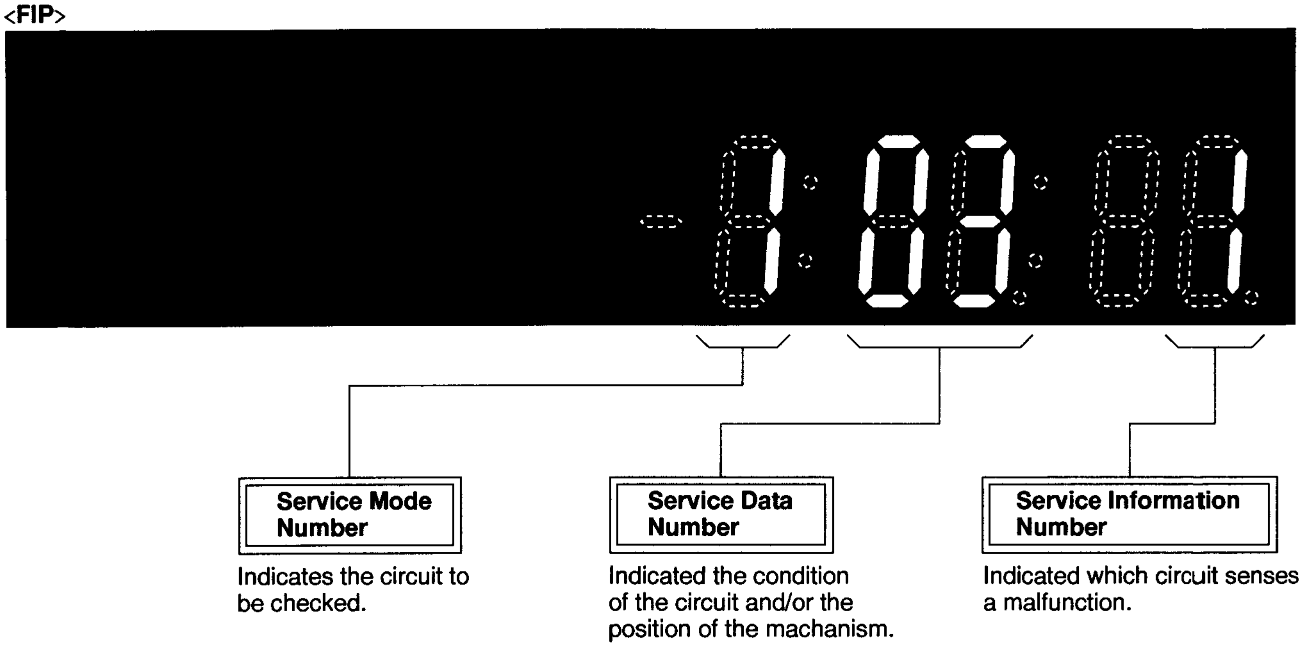
<FIP>



INDICATION	CAUSE	REMEDY/CHECK
U 10	Dew formation.	Wait until the indication disappears.
H 01	After cylinder lock is detected, the cylinder does not start rotating again even after tape unloading.	Check the cylinder-motor drive circuit.
H 02	Cassette tape is not wound up during tape unloading except Eject mode.	Check the capstan-motor drive circuit.
F 03	Mechanism locks during mode transition except Eject mode.	1. Check the loading-motor drive circuit. 2. Check the mechanism phase alignment. 3. Check the Mode Switch.
F 04	Mechanism locks during tape unloading.	1. Check the loading-motor drive circuit. 2. Check the mechanism phase alignment.
F 05	Cassette tape is not wound up during tape unloading in Eject mode.	1. Check the capstan-motor drive circuit. 2. Check the Supply/Take-up reel pulse.
F 06	Mechanism locks after tape unloading in Eject mode.	1. Check the loading-motor drive circuit. 2. Check the mechanism phase alignment for Cassette Holder Unit.
F 09	No serial clock transmission between IC6001 and IC7501.	Check the serial clock circuit.

Fig. T1 Self-Test Indication Display

1-3. SERVICE INFORMATION DISPLAY



Indicates the circuit to be checked.

Indicated the condition of the circuit and/or the position of the machanism.

Indicated which circuit senses a malfunction.

Fig. D1 Service Information Display

1-3-1. Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

1-3-2. Turning on Service Information Display

(1) Turn the Shuttle Ring to FF then push the EJECT button to set the Service Mode.

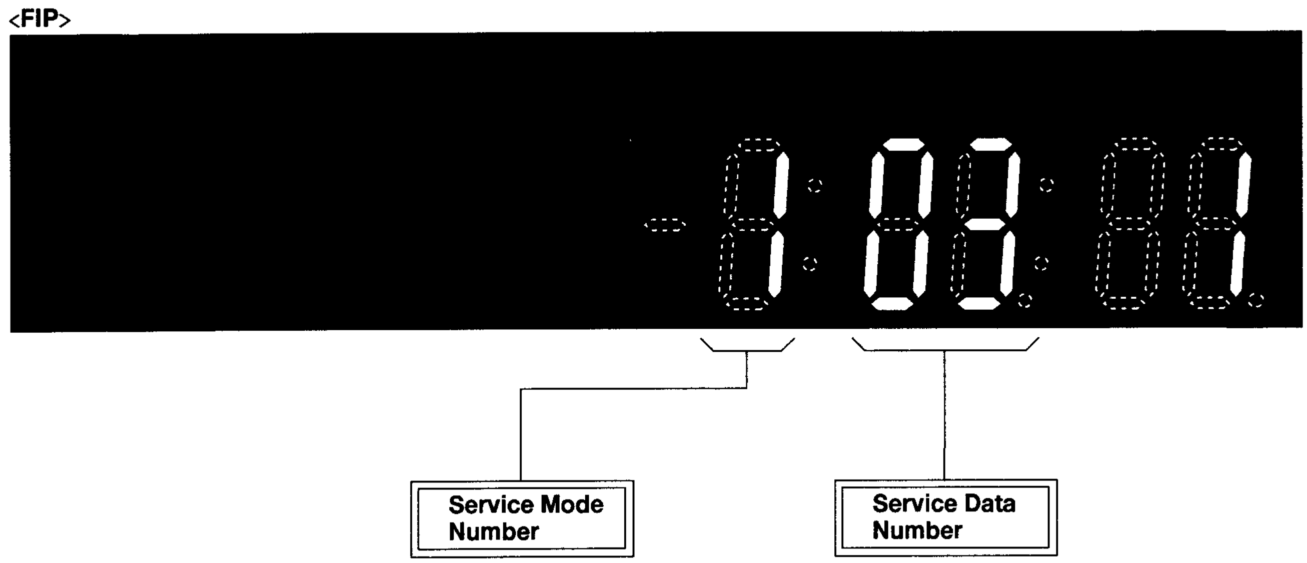
In the Service Information Display, there are four digits divided into 3 functions.
The first digit indicates which of the 7 service modes that the unit is currently in.

MODE 1 : Checks tape protection circuit
MODE 2 : Checks tape transport mechanism
MODE 3 : Checks mode switching operation
MODE 4 : Checks control buttons
MODE 5 : Checks capstan motor
MODE 6 : Checks cylinder motor
MODE 7 : Checks loading/unloading operation

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The forth digit is the service Information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is not supplied.

1-3-3. Use of Service Modes



Indicates the circuit to be checked.

Indicated the condition of the circuit and/or the position of the machanism.

Fig. D2 Service Mode Number and Service Data Number on S.I.D.

(1) Turn on Service Information Display.

(2) To change Service Modes turn the Shuttle Ring to FF then push the EJECT button.

(3) Mode 1 : Checks that the Sensor LED, Supply & Take-up Sensor circuits check the circuits by blocking the light from the Sensor LED to either or both Supply & Take-up Sensors. When the light is blocked to both sensors, "00" should be indicated on the service data number. When the light is blocked to the supply sensor, "01" should be indicated.

1

(4) Mode 2 : Checks the mode switch circuit while indicating mechanism position. Service Data Numbers indicate the position of the mode switch and there by the mechanism position.

2

(5) Mode 3 : Checks that mode switch circuit operations have been completed. Service Data Number should indicate "00" after each mechanism operation is completed.

3

(6) Mode 4 : Checks the operation circuit. Indicates if IC6001 receives the operating commands from the mode buttons and/or remote controller.

4

(7) Mode 5 : Checks the capstan motor circuit. Indicates if the IC6001 has received the command to rotate the capstan motor.

5

(8) Mode 6 : Checks the cylinder motor circuit. IC6001 has received the command to rotate the cylinder motor.

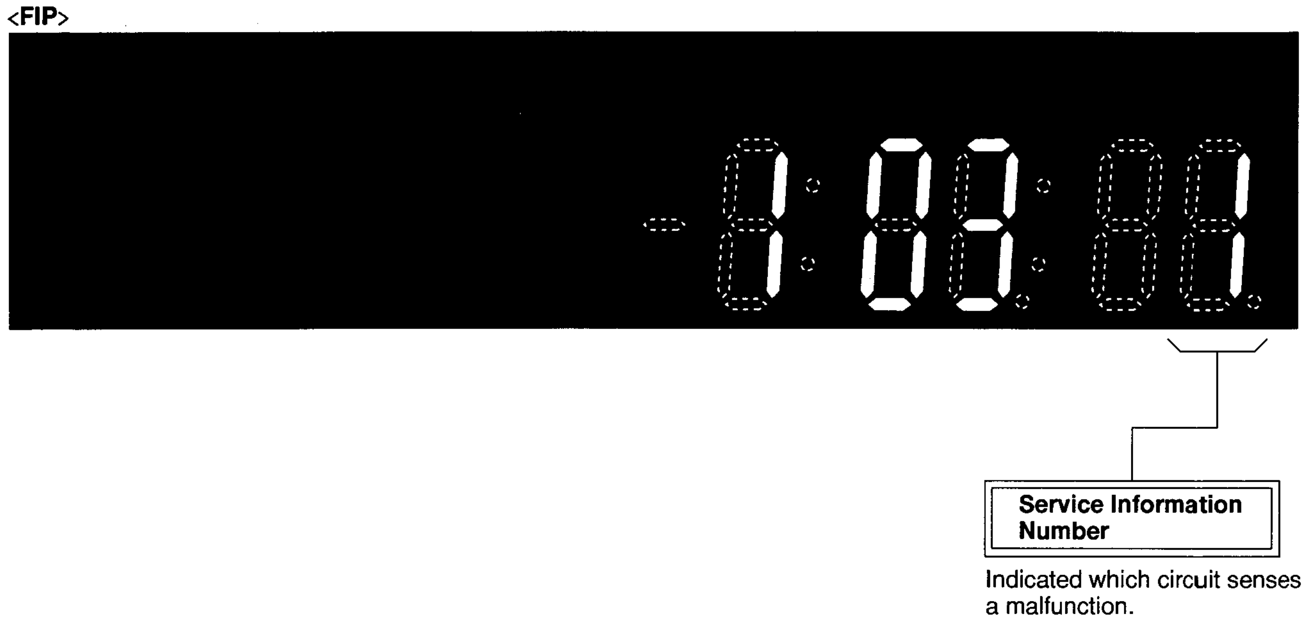
6

(9) Mode 7 : Checks the Loading/Unloading Operation. The Loading Motor rotates for loading operation when the "PLAY" button is pressed. The Loading Motor rotates for unloading operation when the "STOP" button is pressed. This mode can be displayed indefinitely until the OPERATE button is pressed.

7

<NOTE>
Refer to Fig. D5 for details of Service Data Numbers.

1-3-4. Service Information Number



Indicated which circuit senses a malfunction.

Fig. D3 Service Information Number on S.I.D.

Refer to Fig. D4 for details of Service Information Number.

Note:

The Service Information Number display is independent of the service mode display.
The Service Information Number will be stored as long as AC power is not supplied. (If can be displayed in the Service Mode 2.)
If a second error occurs, only the most recent error will be displayed.

Service Information Number	Malfunction
00	Normal (No problem)
01	Cylinder stop
02	Tape reel stop
03	Stop at position other than 4 or 6
04	Stop during unloading
05	Faulty capstan rotation
06	Stop during Cassette-In/Eject operation

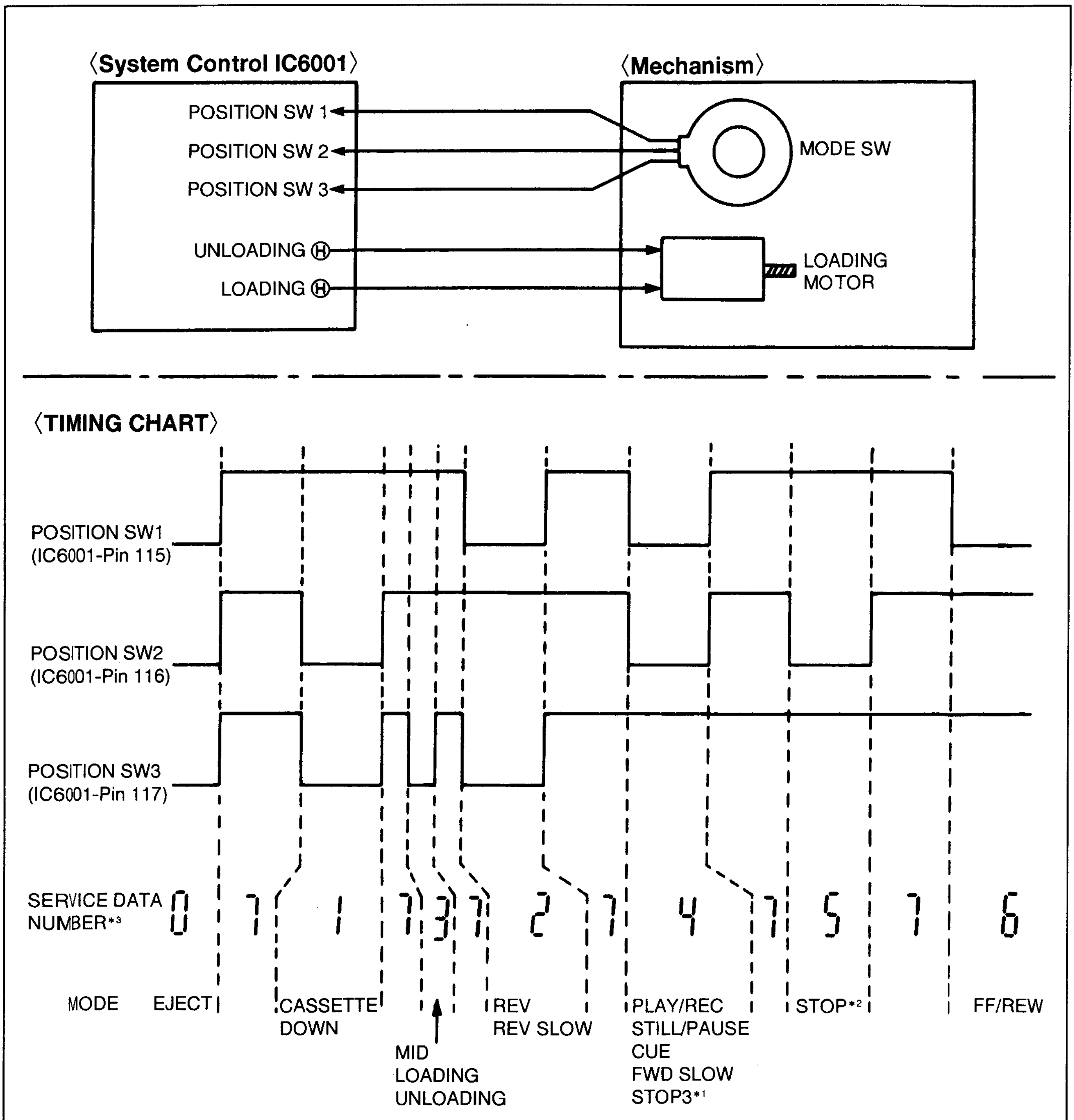
Fig. D4 Detail Service Information Numbers

Service mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	———	00	No light detected at either sensor.	Tape not required.
		01	Tape Beginning. Light to Supply Photo Sensor is blocked.	
		02	Tape End. Light to Take-up Photo Sensor is blocked.	
		03	Light detected at both sensors.	
2	———	00	EJECT	Tape Required. *1: STOP3; The Pinch Roller is on the capstan motor shaft. *2: STOP; The Pinch Roller is off the capstan motor shaft. Refer to Fig. D7 to Check mechanism Position and timing.
		01	Cassette-down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY/REC, STILL/PAUSE, CUE, FWD SLOW, STOP3 *1	
		05	STOP *2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the mode switch circuit or system.	Tape Required.
4	Display only when the operating button is pressed.	Refer to Fig. D6		Tape not required.
5	Left digit only, disregard Right digit display.	8 1 Left Digit Right Digit	8, 9, u, A, –, n, L, and no display indicate that the Capstan motor "PLAY" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.
	Right digit only, disregard left digit display.	8 7 Left Digit Right Digit	1, 2, 3, 4, 5, 6, 7, indicate that the Capstan motor "CUE, FF, Forward Slow" commands received by IC6001.	
	Right digit only, disregard left digit display.	8 Left Digit Right Digit	8, 9, u, A, –, n, L, and no display indicate that the Capstan motor "Reverse, Rew, Reverse Slow" commands received by IC6001.	
6	Left digit only, disregard Right digit display.	1 0 Left Digit Right Digit	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.

Fig. D5 Service Data Display and Indication

1-3-5. Timing Chart from Mode SW to System control IC6001

System control IC6001 senses the mechanism position through the Mode SW.
Fig. D7 shows the timing for Service Mode Number 2.


⟨System Control IC6001⟩
POSITION SW 1
POSITION SW 2
POSITION SW 3
UNLOADING Ⓗ
LOADING Ⓗ
⟨Mechanism⟩
MODE SW
LOADING MOTOR
⟨TIMING CHART⟩
POSITION SW1 (IC6001-Pin 115)
POSITION SW2 (IC6001-Pin 116)
POSITION SW3 (IC6001-Pin 117)
SERVICE DATA NUMBER*3
0 7 1 7 3 7 2 7 4 7 5 7 6
MODE
EJECT
CASSETTE DOWN
MID
LOADING
UNLOADING
REV
REV SLOW
PLAY/REC
STILL/PAUSE
CUE
FWD SLOW
STOP3*1
STOP*2
FF/REW

∗1: Stop 3; The pinch Roller is on the capstan motor shaft.
∗2: Stop; The pinch Roller is off the capstan motor shaft.
∗3: Service Data Number; This is for Service Mode Number 2.

Fig. D6 Timing Chart of Mode SW

1-3-6. Input/Output Chart for IC6001

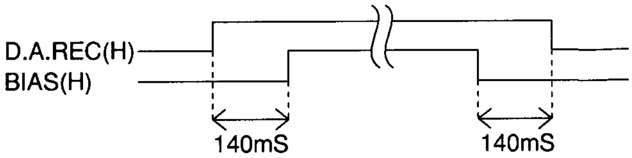
Pin Number	Input/Output	Port Name	Function
1	O	TV (H) / VTR (L)	TV/VTR switch output
2	O	FM MUTE(H)	This port is high during special playback (CUE, REV, SLOW, STILL) mode.
3	O	AUDIO MUTE (H)	This port is high during special playback (CUE, REV, SLOW, STILL) mode.
4	O	EDIT MODE (H)	This port is high during edit mode.
5	O	VIDEO EE (L)	This port is low during EE mode.
6	O	SLOW/STILL (L)	This port is low during SLOW and STILL modes.
7	O	CHG AT (H)	This port is high while the auto-tracking is performed in variable speed playback mode.
8	O	VOLTAGE CHANGE (H)	This port is high while the loading motor torque is increased in FF and REW modes.
9	O	LM LIMIT (H)	Loading motor torque limitter output
10	O	FF/REW (L)	This port is low during FF and REW modes.
11	O	UNLOADING (H)	This port is high while the mechanism is unloaded.
12	O	LOADING (H)	This port is high while the mechanism is loaded.
13	O	D.A. REC (H)	Normal audio recording control 
14	O	BIAS (H)	
15	O	MIX (H)	Normal and HIFI audio mix control MIX ON : HIGH MIX OFF : LOW
16	I	SHORT CHECK (H)	DC voltage (BIAS (H)) detection ● When the low voltage is detected in recording mode, theVCR is turned off. ● When the high voltage is detected in except recording mode, the VCR is turned off.
17	I	S-VHS PB (H)	This port is high during S-VHS playback.
18	O	PB AI2 (H)	AI playback control
19	O	PB AI1 (H)	AI playback control
20	I	S-TAB (L)	This port is low while the cassette tape with safety tab is inserted.

Fig. MP1

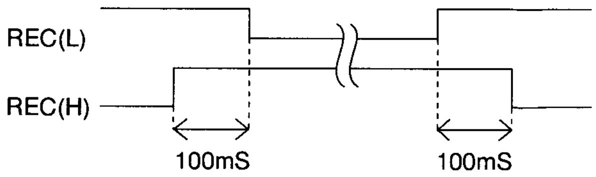
<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>21</td><td>I</td><td>ABS NORM IN</td><td>HIFI audio mode detection
● When the low voltage is detected, the audio output is compulsory normal audio mode.</td></tr>
<tr><td>22</td><td>I</td><td>L CH IN</td><td rowspan="2">HIFI audio mode detection
<table>
<tr><th></th><th>L CH IN</th><th>R CH IN</th></tr>
<tr><td>L CH SEL</td><td>L</td><td>H</td></tr>
<tr><td>R CH SEL</td><td>H</td><td>L</td></tr>
<tr><td>L+R SEL</td><td>L</td><td>L</td></tr>
<tr><td>NORMAL SEL</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>23</td><td>I</td><td>R CH IN</td></tr>
<tr><td>24</td><td>I</td><td>REC AI (L)</td><td>AI mode selection
AI PB ONLY : HIGH
AI PB AND REC : LOW</td></tr>
<tr><td>25</td><td>I</td><td>RESET (L)</td><td>This port is low while IC6001 is reset.</td></tr>
<tr><td>26</td><td>I</td><td>MODE SEL</td><td>Active mode selection for microprocessor</td></tr>
<tr><td>27</td><td>I</td><td>NC</td><td>Not used (Low setting)</td></tr>
<tr><td>28</td><td>I</td><td>PG AUTO (H)</td><td>PG shifter adjustment selection
AUTO ADJUST : HIGH
MANUAL ADJUST : LOW</td></tr>
<tr><td>29</td><td>O</td><td>CAPSTAN RVS (H)</td><td>Capstan motor direction selection
REVERSE : HIGH
FORWARD : LOW</td></tr>
<tr><td>30</td><td>O</td><td>REC (L)</td><td rowspan="2">DC voltage control for recording mode.

</td></tr>
<tr><td>31</td><td>O</td><td>REC (H)</td></tr>
<tr><td>32</td><td>O</td><td>A. DUB (H)</td><td>This port is high during audio dubbing mode.</td></tr>
<tr><td>33</td><td>O</td><td>INSERT (L)</td><td>This port is low during insert mode.</td></tr>
<tr><td>34</td><td>O</td><td>SYSTEM 3</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>35</td><td>O</td><td>SYSTEM 4</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>36</td><td>O</td><td>SYSTEM 5</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>37</td><td>I</td><td>DIGITAL 5V</td><td>VDD</td></tr>
<tr><td>38</td><td>O</td><td>12MHz OUT</td><td>Oscillator output</td></tr>
<tr><td>39</td><td>I</td><td>12MHz IN</td><td>Oscillator input</td></tr>
<tr><td>40</td><td>O</td><td>32KHz OUT</td><td>Oscillator output</td></tr>
<tr><td>41</td><td>I</td><td>32KHz IN</td><td>Oscillator input</td></tr>
</table>

Fig. MP2

Pin Number	Input/Output	Port Name	Function
42	I	DIGITAL GND	GND
43	O	FULL ERASE (H)	Full erase on/off control ON : HIGH OFF : LOW
44	O	D. REC (H)	Video signal recording on/off control
45	O	D. FM. REC (H)	HIFI audio signal recording on/off control
46	O	FLYING ERASE (H)	Flying erase head on/off control ON : HIGH OFF : LOW
47	O	REC CUR 1	AI REC current switching signal output
48	O	REC CUR 2	AI REC current switching signal output
49	O	REC CUR 3	AI REC current switching signal output
50	O	A. H. SW	HIFI audio head switching signal output
51	O	S. DATA OUT	Serial data output
52	I	S. DATA IN	Serial data input
53	O	S. CLOCK	Serial clock output
54	O	5P S. DATA OUT	EDIT 5P serial data output
55	I	5P S. DATA IN	EDIT 5P serial data input
56	O	5P S. CLOCK	EDIT 5P serial clock output
57	O	CAP R/S/F	Capstan rotation direction control REVERSE : HIGH STOP : MIDDLE FOWARD : LOW
58	O	CURRENT LIMIT	Capstan motor current limitter output
59	O	ENV2	AI PB control signal output
60	O	PIC VR OUT	This port supplies the voltage which depends on picture VR setting.
61	O	ART V/H/N	This port supplies artificial vertical sync signal to stabilize the picture in special playback mode.

Fig. MP3

<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>62</td><td>O</td><td>VIDEO H. SW</td><td>Video head switching signal output</td></tr>
<tr><td>63</td><td>O</td><td>ROTARY SW</td><td>Rotary switching signal output</td></tr>
<tr><td>64</td><td>O</td><td>H. AMP. SW</td><td>Head amp switching signal output</td></tr>
<tr><td>65</td><td>I</td><td>ENVE SELECT</td><td>This port receives the playback envelope signal level to select the video head in special playback mode.</td></tr>
<tr><td>94</td><td>I</td><td>T- PHOTO</td><td>This port receives the signal when take-up photo sensor detects the tape beginning.</td></tr>
<tr><td>95</td><td>I</td><td>S-PHOTO</td><td>This port receives the signal when supply photo sensor detects the tape end.</td></tr>
<tr><td>96</td><td>I</td><td>NORMAL/ SERVICE/TEST</td><td>NORMAL/SERVICE/TEST mode selection
<table>
<tr><th>INPUT VOLTAGE</th><th>MODE</th></tr>
<tr><td>MORE THAN 4.0V</td><td>NORMAL</td></tr>
<tr><td>2.5V~4.0V</td><td>SERVICE</td></tr>
<tr><td>LESS THAN 2.5V</td><td>TEST</td></tr>
</table></td></tr>
<tr><td>97</td><td>I</td><td>SYSTEM SELECT</td><td>System mode selection for auto setup
<table>
<tr><th>INPUT VOLTAGE</th><th>MODE</th></tr>
<tr><td>MORE THAN 3.0V</td><td>MODE 4</td></tr>
<tr><td>2.0V~3.0V</td><td>MODE 2</td></tr>
<tr><td>LESS THAN 2.0V</td><td>MODE 1</td></tr>
</table></td></tr>
<tr><td>98</td><td>I</td><td>STEREO/BIL</td><td>Audio mode detection for display on the OSD
<table>
<tr><th>INPUT VOLTAGE</th><th>DISPLAY</th></tr>
<tr><td>MORE THAN 4.2V</td><td>NO DISPLAY</td></tr>
<tr><td>3.0V~4.2V</td><td>MONO 1</td></tr>
<tr><td>2.0V~3.0V</td><td>BILINGUAL</td></tr>
<tr><td>0.8V~2.0V</td><td>MONO 1+2</td></tr>
<tr><td>LESS THAN 0.8V</td><td>STEREO</td></tr>
</table></td></tr>
<tr><td>99</td><td>I</td><td>DEW SNS</td><td>This port is more than 1.36V during detecting the dew formation.</td></tr>
<tr><td>100</td><td>I</td><td>ATIC SEL</td><td>Head amp IC setting for playback envelope detection
<table>
<tr><th>INPUT VOLTAGE</th><th>IC</th></tr>
<tr><td>MORE THAN 3.0V</td><td>TEA5705</td></tr>
<tr><td>2.0V~3.0V</td><td>AN3336</td></tr>
<tr><td>LESS THAN 2.0V</td><td>AN3360</td></tr>
</table></td></tr>
<tr><td>101</td><td>I</td><td>PIC VR IN</td><td>This port receives the voltage which depends on picture VR setting.</td></tr>
<tr><td>102</td><td>I</td><td>CHROMA IN</td><td>AI PB Chrominance level adjustment input</td></tr>
<tr><td>103</td><td>I</td><td>SLTR MM</td><td>Slowtracking adjustment input</td></tr>
<tr><td>104</td><td>I</td><td>AV MODE SEL</td><td>TV/VTR switch setting
<table>
<tr><th>INPUT VOLTAGE</th><th>SWITCH</th></tr>
<tr><td>MORE THAN 3.0V</td><td>TV/VTR</td></tr>
<tr><td>2.0V~3.0V</td><td>NO SW</td></tr>
<tr><td>LESS THAN 2.0V</td><td>AV LINK</td></tr>
</table></td></tr>
</table>

Fig. MP4

<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>105</td><td>I</td><td>TRACKING ENVE</td><td>Playback envelope input for tracking adjustment</td></tr>
<tr><td>106</td><td>I/O</td><td>EDIT TRIG</td><td>Trigger signal in/output for synchronized editing</td></tr>
<tr><td>107</td><td>O</td><td>2H (H)</td><td>This port supplies the high signal in SP mode.</td></tr>
<tr><td>108</td><td>O</td><td>T SNS LED (L)</td><td>Sensor LED drive signal output
● When this port supplies the low signal, the sensor LED is lit.</td></tr>
<tr><td>109</td><td>I/O</td><td>PREROLL</td><td>Preroll signal in/output for synchronized editing.</td></tr>
<tr><td>110</td><td>O</td><td>SYSTEM 2</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>111</td><td>O</td><td>SYSTEM 1</td><td>Refer to Fig. MP. 6</td></tr>
<tr><td>112</td><td>I/O</td><td>HIFI/MIX/NORM</td><td rowspan="2">Audio output mode control
<table>
<tr><th rowspan="2"></th><th colspan="4">MODE</th></tr>
<tr><th>STEREO</th><th>L CH</th><th>R CH</th><th>NORMAL</th></tr>
<tr><td>HIFI/MIX/NORM</td><td>H</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>L CH/R CH/STEREO</td><td>L</td><td>H</td><td>Z</td><td>L</td></tr>
</table>
Z: HIGH IMPEDANCE</td></tr>
<tr><td>113</td><td>O</td><td>L CH/R CH/ STEREO</td></tr>
<tr><td>114</td><td>I</td><td>DIGITAL 5V</td><td>VDD</td></tr>
<tr><td>115</td><td>I</td><td>POSITION SW1</td><td rowspan="3">
<table>
<tr><th>P. SW 3</th><th>P. SW 2</th><th>P. SW 1</th><th>Position (Mode) Name</th></tr>
<tr><td>O</td><td>O</td><td>O</td><td>EJECT</td></tr>
<tr><td>O</td><td>O</td><td>I</td><td>CASSETTE DOWN</td></tr>
<tr><td>O</td><td>I</td><td>O</td><td>REV, REV SLOW</td></tr>
<tr><td>O</td><td>I</td><td>I</td><td>MID (LOADING/UNLOADING)</td></tr>
<tr><td>I</td><td>O</td><td>O</td><td>PLAY/REC, STILL/PAUSE, CUE, FWD SLOW STOP3 *1</td></tr>
<tr><td>I</td><td>O</td><td>I</td><td>STOP</td></tr>
<tr><td>I</td><td>I</td><td>O</td><td>FF/REW</td></tr>
<tr><td>I</td><td>I</td><td>I</td><td>INTERMEDIATE</td></tr>
</table>
(*1) The Pinch Roller is on the capstan motor shaft.</td></tr>
<tr><td>116</td><td>I</td><td>POSITION SW2</td></tr>
<tr><td>117</td><td>I</td><td>POSITION SW3</td></tr>
<tr><td>118</td><td>O</td><td>AUDIO MODE SELECT</td><td>Audio mode switching signal output</td></tr>
<tr><td>119</td><td>I</td><td>GND</td><td>GND</td></tr>
<tr><td>120</td><td>I</td><td>REC WIDE (H)</td><td>This port is high during wide recording mode.</td></tr>
<tr><td>121</td><td>O</td><td>WIDE (H)</td><td>This port is high during playback the tape recorded with wide mode.</td></tr>
<tr><td>122</td><td>O</td><td>AI MES (H)</td><td>This port is high when measuring the head and tape condition to determine the optimum recording current before starting the AI recording.</td></tr>
<tr><td>123</td><td>O</td><td>POWER OFF (H)</td><td>Power on/off control</td></tr>
<tr><td>124</td><td>O</td><td>TRICK (L)</td><td>This port is low during special playback (CUE, REV, SLOW, STILL) mode.</td></tr>
</table>

Fig. MP5

	MODE 1	MODE 2	MODE 3	MODE 4
PIN 111 (SYSTEM 1)	H: MESECAM L : PAL Z : AUTO	H: MESECAM L : PAL	H: PAL L : NTSC Z : AUTO	H: MESECAM L : PAL Z : AUTO
PIN 110 (SYSTEM 2)	H: EXCEPT NTSC L : NTSC-M	H: SECAM L : PAL Z : AUTO	——	H: EXCEPT NTSC L : NTSC-M
PIN 34 (SYSTEM 3)	H: NORMAL L : DBS/CANAL	H: NORMAL L : DBS/CANAL	——	H: NORMAL L : DBS/CANAL
PIN 35 (SYSTEM 4)	H: PAL- I L : B/G/D/K	H: SECAM L : PAL	——	H: PAL-I L : B/G/D/K
PIN 36 (SYSTEM 5)	H: PAL L : NTSC	H: PAL L : NTSC	H: 50Hz L : 60Hz	H: PAL L : NTSC

Z: HIGH IMPEDANCE

Fig. MP6

Note: 1. The mode is decided depend on SYSTEM SELECT PORT (PIN 97).

1-3-7. AI (ARTIFICIAL INTELLIGENCE) FUNCTION

The recording and playback are adjusted to achieve optimum picture quality from tapes with varying charactristics.

(1) Detail explanation

<Playback mode>

The picture quality is varying from the different tapes as follows:

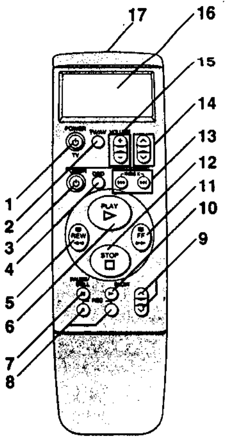
1) If the output level is low, from worn or rental cassette tapes, a soft picture is obtained by the RF equlizer and picture control on the Lumi./Chro. Pack C.B.A.
2) If the output level is medium, from normal tapes, a sharp picture is obtained from the emphasis and picture control on the Lumi./Chro. Pack C.B.A.
3) If the output level is high, from HG/S tapes, a sharp and detailed picture is obtained from the RF equlizer, emphasis picture control and noise canceller on the Lumi./Chro. Pack C.B.A.

<Recording mode>

The optimum recording level is used for all head conditions and for all types of tapes.

1) The luminance S/N is boosted 2dB.
2) Recording head wear compensation.
3) The optimum recording current is achieved in 1.5 seconds.

Infra-red Remote Controller



1 POWER (TV)
To switch the TV from on to standby mode or vice versa. In standby mode, the TV is still connected to the mains.
- With some TV models, it may only be possible to switch the TV to standby mode using this button. In this case, use **TV/AV** or **∨ ∧ (TV)** to switch the TV on.

2 TV/AV
To select the TV input.

3 POWER
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

4 OSD
For the On Screen Display Function.

5 REW (REWIND)

In the stop mode:	To rewind the tape.
In the playback mode:	To search backward.
In the rewind mode:	To obtain high speed picture.

"◁◁" is lit.

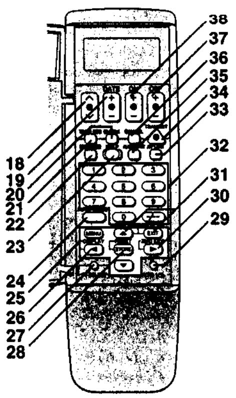
6 PLAY
To start playback. "▷" is lit.
For the repeat playback function.

7 PAUSE/STILL
During playback: Still picture.
During recording: To interrupt recording.

8 REC
To start a recording.
- Press both buttons simultaneously.

9 ∨ ∧ (VTR)
To select the required programme position (TV station).

10 SLOW
For the slow motion playback function. "▯▷" is lit.



11 FF (FAST FORWARD)

In the stop mode:	To fast forward the tape.
In the playback mode:	To search forward.
In the fast forward mode:	To obtain high speed picture.

"▷▷" is lit.

12 STOP
To stop any playback or recording.

13 INDEX
For the index search function.

14 ∨ ∧ (TV)
To select the required programme position (TV station) of the TV.

15 VOLUME
To adjust the volume of the TV.

16 Display

17 Infra-red Transmitter
The programming data are transmitted from here to the VTR.

18 ∨ ∧
To programme a timer recording.

19 DATE
To programme a timer recording.

20 CHECK
To check timer programmes.

21 TIMER REC
To turn the timer recording function on and off.
◷ is lit or not lit.
Once operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

22 SHOWVIEW
For the ShowView programming.

23 SP/LP
To select the tape speed desired for recording.
SP gives the best picture quality.
LP gives the longest recording time.

24 INPUT SELECT
To select the A1, A2 or A3 external recording source.

25 OSD Operation Buttons

MENU:	To make On Screen Display **Main Menu** appear on the TV screen.
▲ ▼ ◀ ▶/STORE:	To make selections from On Screen Display.
EXIT:	To make On Screen Display disappear on the TV screen.

26 DISPLAY
To change the indication on the VTR Display or On Screen Display.

→Clock→Counter→Remaining Tape Time—

27 TV SELECT
To set the remote controller for operation of the TV.

28 RESET
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

29 VTR 1/2

VTR1:	Set to this position on both the VTR and remote controller for normal use with one VTR.
VTR2:	Set to this position when using two Panasonic VTRs.

30 ZERO STOP
For the zero stop function.

31 TRACKING/V-LOCK
For manual tracking adjustment
The + and − buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by the automatic digital tracking control. After making a manual adjustment, press both buttons together to return to automatic digital tracking control.

For slow tracking adjustment
When noise bars appear during Still or Slow playback, switch over to slow playback and adjust with the + or − Button to reduce the noise bars.

For vertical locking adjustment
Use the + and − buttons to minimize any vertical jitter during still-picture playback.

32 Number Buttons
- To select the programme positions (1−99).

9: (9)
19: (-/--)→(1)→(9)

- To programme a ShowView number.

33 AV LINK
To select the VTR mode or TV mode for AV LINK.

34 TRANSMIT
To transmit the data that has been set on the remote controller to the VTR.

35 AUDIO OUT
To select the desired sound mode.
At the every push of this button, the audio output mode changes as follows.

→Stereo→Left→Right→Normal audio track—

The Left (L) and Right (R) Indicators shown which sound mode is selected in the following way.

Stereo:	Both the L and R Indicators appear.
Left:	The L Indicator appears.
Right:	The R Indicator appears.
Normal:	Both the L and R Indicators don't appear.

36 CANCEL
To cancel the settings made for a timer recording.

37 OFF
To programme a timer recording.

38 ON
To programme a timer recording.

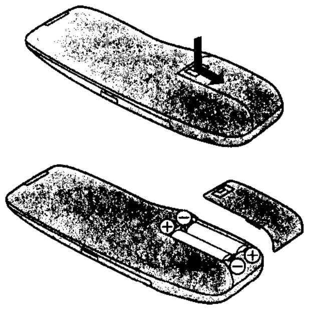
Power Source for the Remote Controller

The remote controller is powered by 2 "AA", "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

Precautions for Battery Replacement

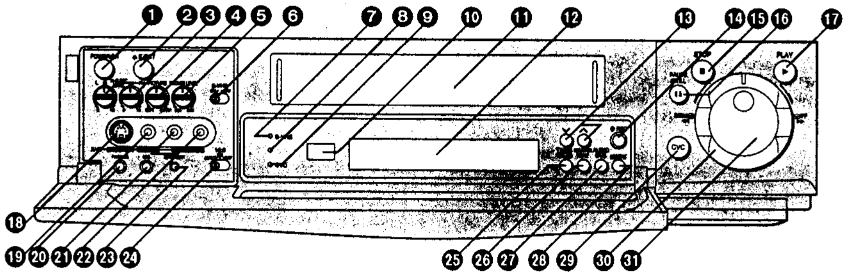
- Load the new batteries with their polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

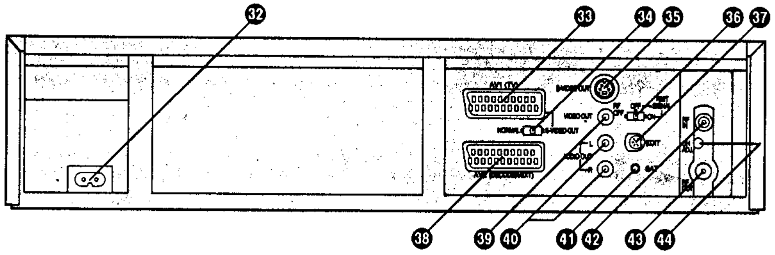
Installing the Batteries



Controls and Connection Sockets

This gives a detailed explanation of the function of each button, switch and connection socket.





① **POWER ⏻/I**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

② **EJECT**
To eject a video cassette.

③ **Hi-Fi REC LEVEL**
To adjust the recording level to peak at +4 dB on the recording level indicator.

④ **PICTURE**
To make picture sharper (SHARP) or softer (SOFT).

⑤ **PHONES LEVEL**
For adjusting the volume level of connected stereo headphones.

⑥ **S-VHS**
When recording on an S-VHS cassette tape, select the desired recording format with this switch.

ON:	The recording will be made in the S-VHS format. •The S-VHS indicator lights up.
OFF:	The recording will be made in the VHS format. •The S-VHS indicator does not light up. (It is possible to make a recording on an S-VHS cassette tape in the VHS format, for example, in order to play back the tape on another VHS VTR.)

- When using VHS cassettes, the recording is made in the VHS format irrespective of the position to which this switch is set.
- Set this switch to "OFF" to play an S-VHS cassette tape recorded in the VHS format.
- When a tape which was recorded in the S-VHS format is played back on a conventional VHS VTR, it is not possible to obtain playback picture.

⑦ **S-VHS Indicator**
Lights up when the S-VHS switch is set to ON.

⑧ **Standby Indicator**
This indicator is lit when the VTR is turned off or the VTR is timer recording standby mode.

⑨ **CVC Indicator**
When the CVC function is on, this indicator is lit.

⑩ **Infra-red Remote Control Receiver Window**

⑪ **Cassette Compartment**
Insert a video cassette here.

⑫ **Display**

⑬ **∨ ∧**
To select the required programme position (TV station).

⑭ **REC**
To start a recording.

⑮ **STOP**
To stop any playback or recording.

⑯ **PAUSE/STILL**
In the stop mode: Still picture (Jog/Shuttle mode).
During playback: Still picture (Jog/Shuttle mode).
During recording: To interrupt recording.

⑰ **PLAY**
To start playback. "▷" is lit.
For the repeat playback function.

⑱ **S-VIDEO IN (AV3)**
To connect the S-Video cable to a movie camera or to another VTR that has a S-Video output socket.
- If an S-Video cable is connected, other video input is automatically switched off.

⑲ **VIDEO IN (AV3)**
To connect the video cable to a movie camera or to another VTR.

⑳ **PHONES**
To connect stereo headphones.

㉑ **MIC**
To connect a microphone for recording. Once connected, this socket has priority.

㉒ **AUDIO IN (AV3)**
To connect the audio cable to a movie camera or to another VTR.

㉓ **SYNC. EDIT**
To connect a movie camera or another VTR equipped with synchronized editing capability.
To connect a movie camera or another VTR equipped with LANC socket for One-Touch-Editing.

㉔ **16:9**

AUTO:	For automatically identifying the pictures as 16:9 pictures or 4:3 pictures during recording and playback and showing them on the wide TV screen. •Normally set at this position.
ON:	For recording and playback in such a way that the pictures expanded to 16:9 are shown on the wide TV screen at all time.
OFF:	For recording and playback in such a way that 4:3 pictures are shown on the wide or 4:3 TV screen at all times.

㉕ **TIMER REC**
To turn the timer recording function on and off.
⏲ is lit or not lit.
Once operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

㉖ **COUNTER RESET**
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

㉗ **AUDIO DUB**
To set up the VTR for audio dubbing.
A DUB is appeared on screen display.

㉘ **INSERT**
To set up the VTR for insert editing.
INSERT is appeared on screen display.

㉙ **CVC (Crystal View Control)**

ON:	Using the CVC function, playback and recording are performed in the state which achieves optimum picture quality in light of characteristics of a tape. •The CVC indicator is lit. •This control should normally be left in the ON position.
OFF:	Turn off the CVC function. •The CVC indicator is not lit.

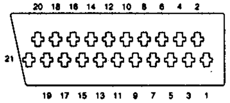
㉚ **Shuttle Ring**

In the stop mode:	To rewind or fast forward the tape.
In the playback mode:	To search picture backward or forward.
In the still playback mode:	To adjust playback speed backward or forward.
In the rewind or fast forward mode:	To obtain high speed picture.

㉛ **Jog Dial**
To locate any desired frame with utmost precision.

㉜ AC IN~
To connect to the main power supply.

㉝ AV1 (TV)
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.
This is also called Scart
Peritel
Euro Connector
Euro AV



NORMAL (AV1/AV2)		S-VIDEO (AV1)	
1	AUDIO OUTPUT CH2 (R)	1	AUDIO OUTPUT CH2 (R)
2	AUDIO INPUT CH2 (R)	2	AUDIO INPUT CH2 (R)
3	AUDIO OUTPUT CH1 (L)	3	AUDIO OUTPUT CH1 (L)
4	AUDIO GND	4	AUDIO GND
5	BLUE GND	5	No connection
6	AUDIO INPUT CH1 (L)	6	AUDIO INPUT CH1 (L)
7	BLUE	7	No connection
8	SWITCHING VOLTAGE	8	SWITCHING VOLTAGE
9	GREEN GND	9	No connection
10	No connection	10	No connection
11	GREEN	11	No connection
12	No connection	12	No connection
13	RED GND	13	No connection
14	BLANKING GND	14	No connection
15	RED	15	C OUT
16	BLANKING	16	No connection
17	VIDEO OUTPUT GND	17	VIDEO OUTPUT GND
18	VIDEO INPUT GND	18	No connection
19	VIDEO OUTPUT	19	Y OUT
20	VIDEO INPUT	20	VIDEO INPUT
21	GND	21	GND

Caution: RGB reservation for only E/E operation when connecting the Pay TV decoder

㉞ NORMAL/S-VIDEO OUT
NORMAL: Normally set to this position.
S-VIDEO OUT (AV1):
Set to this position when connecting the VTR to a TV set equipped with 21-pin Euro-AV Connector with pins for separate Y/C signal input.

㉟ S-VIDEO OUT
To connect the S-Video cable to a TV or another VTR that has a S-Video input socket.
- If an S-Video cable is connected, other video output is automatically switched off.

㊱ RF OFF/TEST SIGNAL
RF OFF: Set to this position when the VTR is connected to the TV via the 21-pin scart cable.
TEST SIGNAL OFF:
Set to this position when the VTR is connected to the TV via the RF coaxial cable only.
TEST SIGNAL ON:
Set to this position when tuning the TV into the VTR.
The test signal is transmitted on channel 36 initially.

㊲ EDIT
By connecting the optional Editing Controller (VW-EC300E/VW-EC310E) to this socket, such editing functions as Assemble Editing, Insert Editing and Audio Dubbing can be performed more quickly and efficiently between two VTRs or between a VTR and a movie camera.
To connect the Edit cable to a movie camera or to another VTR for One-Touch-Editing.

㊳ AV2 (DECODER/EXT)
To connect to a decoder or another VTR.

㊴ VIDEO OUT
To connect the video cable to a TV or another VTR.

㊵ AUDIO OUT
To connect the sound to a stereo audio system.

㊶ No function

㊷ RF IN
To connect to the external aerial.

㊸ RF OUT
To connect to the aerial terminal on a TV set.

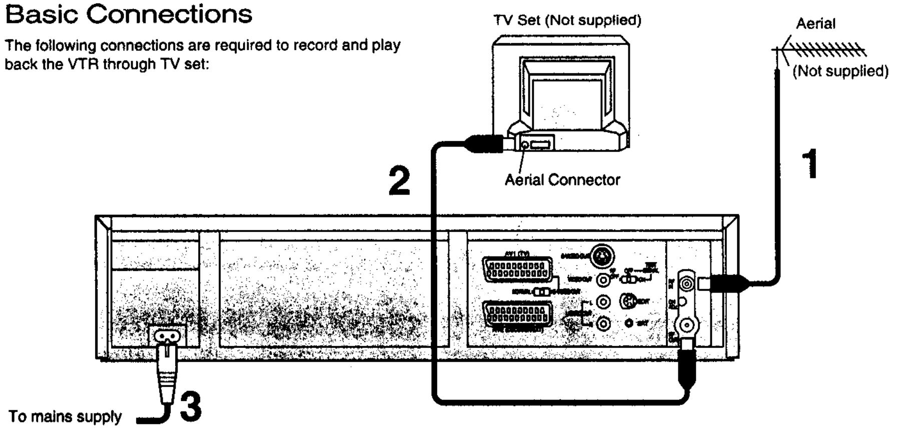
㊹ CH ADJ.
To adjust the RF transmitting channel 30~42.

Connections

This tells you how to connect with an aerial, TV, etc.

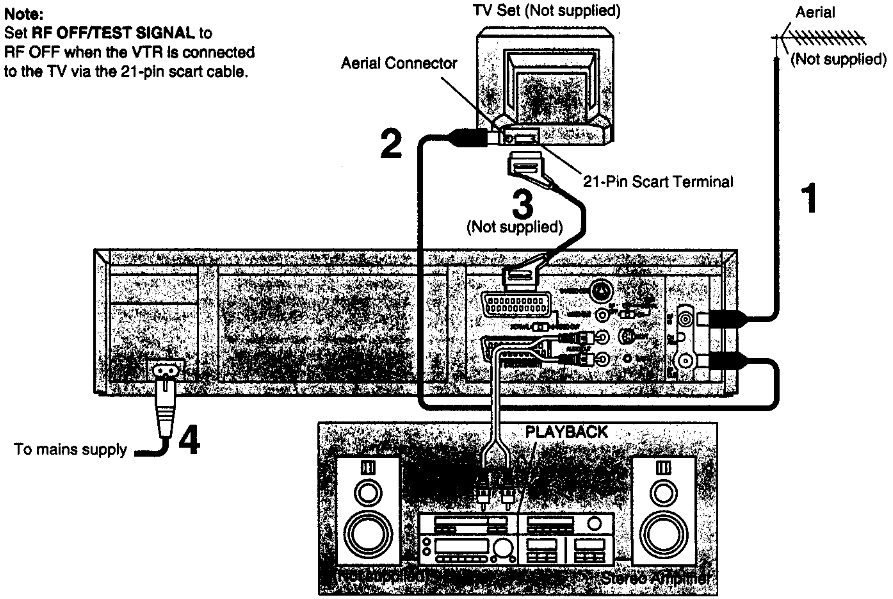
Basic Connections

The following connections are required to record and play back the VTR through TV set:



Connection to a TV Set with 21-Pin Scart Terminal

Note:
Set **RF OFF/TEST SIGNAL** to RF OFF when the VTR is connected to the TV via the 21-pin scart cable.



•Connection to a Stereo Amplifier

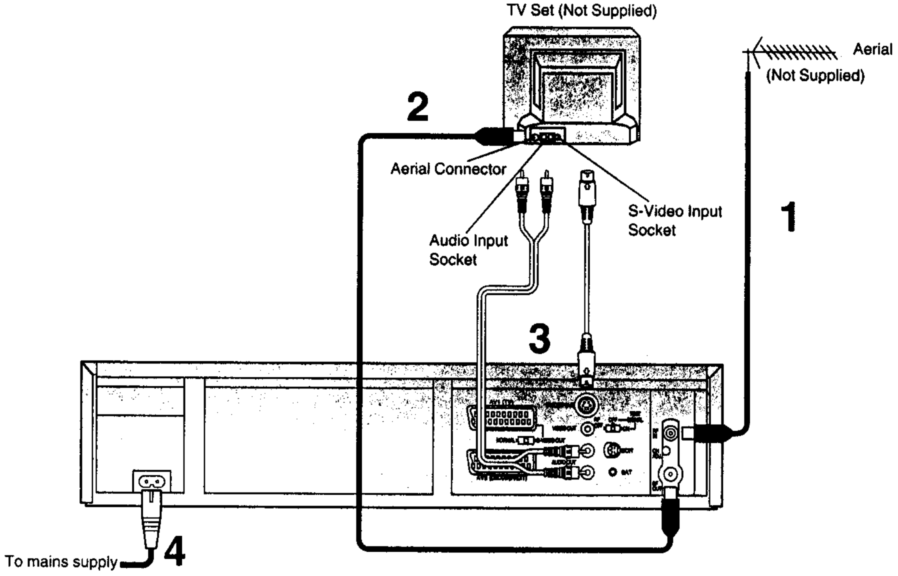
1—21

Connection to a TV Set with S-Video Socket

This VTR uses the S-VHS format that makes it possible to obtain high resolution and high picture quality by using the high-performance S-VHS video cassette tapes.

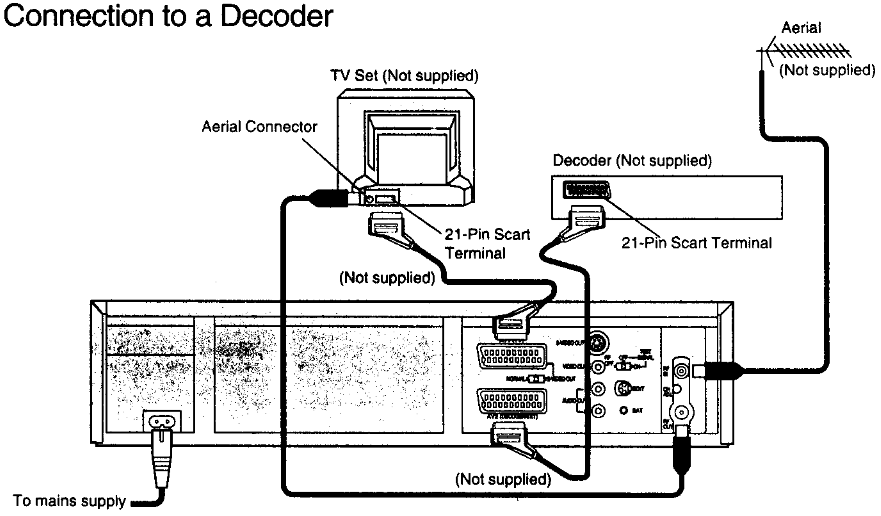
The conventional video sockets of VTRs output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the video tape. The new S (Separate)-Video Socket allows separate transmission of signals in order to obtain clearer pictures.

The connection with the S-Video Cable can also be used for playback of a tape that was recorded in the conventional VHS system. The "S" in the "S-Video Socket" stands for "SEPARATED Y/C" not for "S-VHS".



TV Set (Not Supplied)
Aerial
(Not Supplied)
2
Aerial Connector
Audio Input Socket
S-Video Input Socket
1
3
To mains supply
4

Connection to a Decoder



Aerial
(Not supplied)
TV Set (Not supplied)
Aerial Connector
Decoder (Not supplied)
21-Pin Scart Terminal
21-Pin Scart Terminal
(Not supplied)
(Not supplied)
To mains supply

Notes:

- If the TV set is provided with an RGB-compatible connector, connect the 21-pin AV cable from the VTR to this connector. Use full-pin 21-pin AV cables for connecting the TV set and VTR and for connecting the VTR and decoder.
- Set **RF OFF/TEST SIGNAL** to RF OFF when the VTR is connected to the TV via the 21-pin scart cable.

AV LINK

With this button the connected colour TV set can be switched from TV mode to VTR mode (vice versa) when it is connected by means of 21-pin scart cable.

This makes a variety of functions possible such as simultaneous recording and viewing when a Pay TV decoder or a satellite receiver has been connected.

VTR mode (VTR indicator lights):
To enjoy sound and pictures from the VTR.

- When **MENU** is pressed and the OSD (On Screen Display) screen is displayed, the unit also automatically switches to VTR mode.
  However, if the unit is originally in TV mode, the VTR indicator is not displayed.
- The unit also automatically switched to VTR mode when playback is started. However, the unit cannot be returned to TV mode during playback.

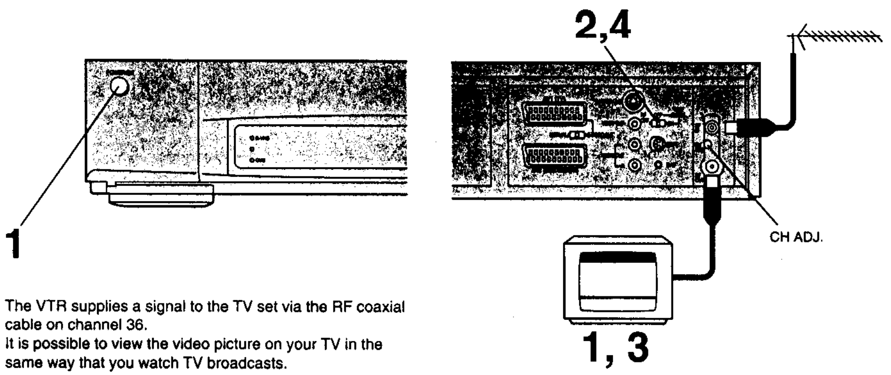
TV mode (VTR indicator goes off):
To watch another programme on the TV while recording on the VTR.

- Select the programme to be watched using the TV set's tuner.
- The sound and pictures of a different channel are received by the VTR.

VTR		**TV set**
Power On	VTR mode	AV input selected
	TV mode	Input from TV set's tuner*
Power Off	—	Input from TV set's tuner

*When the VTR is set to the TV mode and the Pay TV channel is selected, the signals will still be scrambled even when Pay TV is selected by the TV set's tuner. At a time like this, either set the VTR to the VTR mode or switch the TV set's input signals to AV input.

Tuning the TV to your VTR



The VTR supplies a signal to the TV set via the RF coaxial cable on channel 36.
It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

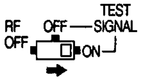
If you have connected the VTR to the TV through the 21-pin scart terminal, then you do not need to follow the procedure mentioned below.

Operations

1 POWER/I

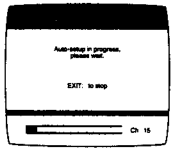
Turn on the TV and VTR.

2



To generate a test pattern, set **RF OFF/ TEST SIGNAL** to TEST SIGNAL ON.

3 **On Screen Display**

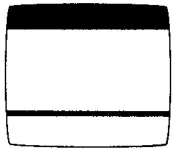


Auto-setup in progress.
please wait.

EXIT: to stop

Ch 15

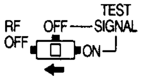
(During Auto Setup)



(After Auto Setup)

Set the TV to an unused position which you wish to use for your video playback.

4



Set **RF OFF/TEST SIGNAL** to TEST SIGNAL OFF.

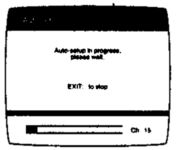
Note:
The test signal is transmitted on video channel 36. If you are encountering interference from a TV broadcast on this video channel, you may readjust to another free channel (30–42) by using the **CH ADJ.** screw which is located on the rear of the VTR.
Please note that if the **CH ADJ.** screw is used then you will have to retune your TV to the test signal as in item **2** to 4 above.

Auto Setup

Auto Setup

When the VTR is turned on after connecting the aerial lead and the mains lead, Auto setup (Auto tuning and Auto clock setting) starts.

On Screen Display



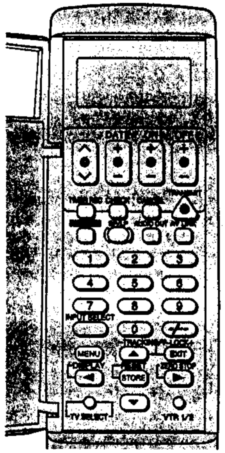
Auto-setup in progress.
please wait.

EXIT: to stop

Ch 15

- The Auto setup is searching for TV station from VHF minimum to UHF maximum and memorizing the data for every programme position. The other programme positions are skipped.
- The Auto setup takes five or more minutes to complete the search for TV station and the clock setting.

Notes:
- If VTR is not correctly set by Auto setup, see **Various settings** on pages 30–33.
- Auto clock setting will not work correctly if teletext information is not available. If the clock setting screen appears after auto tuning has been completed, set clock manually. See page 33.
- Clock information is subject to teletext information. If year information is not in teletext or time information in teletext is incorrect, set clock manually. See page 33.



Country-Selection

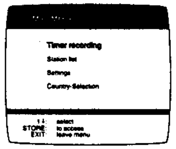
After the Auto setup is finished, select your country to set TV station list, guide number for ShowView and language.

Preparations

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.

1 Press **MENU**.

MENU

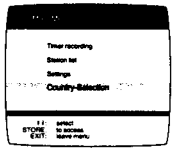


Timer recording
Station list
Settings
Country-Selection

↑↓: select
STORE: to access
EXIT: leave menu

2 Select **Country-Selection**.

▲ ▼ → STORE

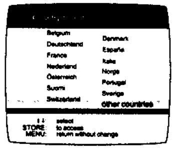


Timer recording
Station list
Settings
Country-Selection

↑↓: select
STORE: to access
EXIT: leave menu

3 Select the desired country.
- Refer to page 37 as well.

▲ ▼



Belgium
Deutschland
France
Nederland
Österreich
Suomi
Switzerland
Danmark
España
Italia
Norge
Portugal
Sverige
other countries

↑↓: select
STORE: to access
MENU: return without change

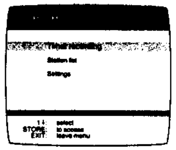
4 Press **STORE**, and then press **MENU**.

STORE → MENU

Viewing the TV station list

1 Press **MENU**.

MENU

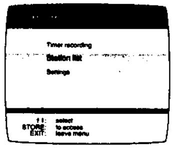


Timer recording
Station list
Settings

↑↓: select
STORE: to access
EXIT: leave menu

2 Select **Station list**.

▲ ▼ → STORE

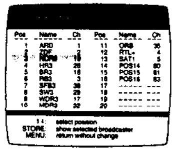


Timer recording
Station list
Settings

↑↓: select
STORE: to access
EXIT: leave menu

3 Select the desired TV station, if you want to view the broadcast.

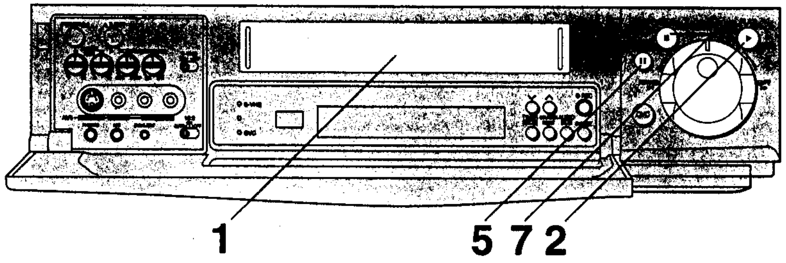
▲ ▼ → STORE

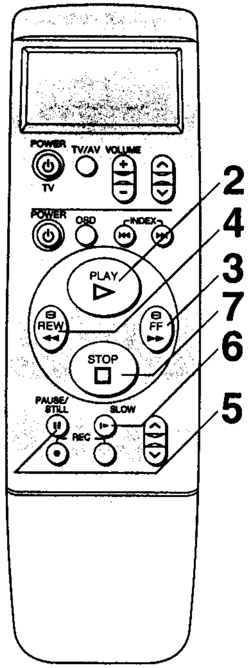


Pos	Name	Ch	Pos	Name	Ch
1	ARD	1	11	ORB	36
2	ZDF	2	12	RTL+	4
3	NDR3	19	13	SAT1	5
4	HR3	26	14	POS14	60
5	BR3	18	15	POS15	61
6	RB3	3	16	POS16	63
7	SFB3	38	17	-----	---
8	SW3	29	18	-----	---
9	WDR3	17	19	-----	---
10	MDR3	32	20	-----	---

↑↓: select position
STORE: show selected broadcaster
MENU: return without change

Playback




POWER
TV/AV
VOLUME
TV
POWER
OSD
INDEX
PLAY
REW
FF
STOP
PAUSE/STILL
SLOW
REC
2
4
3
7
6
5

	Operations	Display Symbols	
1		⊡	Insert a recorded cassette tape.
2	PLAY ▷	▷	Start viewing the picture.
3	FF ▸▸	▷▷	Search forward by tapping **FF**. •To change back to normal playback, press **PLAY**.
4	REW ◂◂	◁◁	Search backward by tapping **REW**. •To change back to normal playback, press **PLAY**.
5	PAUSE/ STILL ⏸	▯▯	View a still picture. •To continue the normal playback, press **PLAY** or **PAUSE/STILL**.
6	SLOW ▸	▯▷	View the slow motion picture. •To continue the normal playback, press **PLAY**.
7	STOP ◻		Stop viewing the picture.

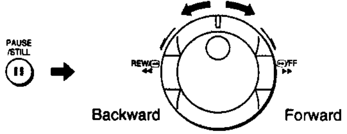
Other Playback Functions

To change the Playback Speed

Using Shuttle Ring:

1 Press **PAUSE/STILL** on the VTR.

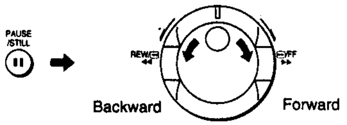
2 Rotate Shuttle Ring.


PAUSE /STILL
REW
FF
Backward
Forward

To locate the Desired Picture Exactly

1 Press **PAUSE/STILL** on the VTR.

2 Turn Jog Dial.


PAUSE /STILL
REW
FF
Backward
Forward

To obtain High Speed Picture During Fast Forward or Rewind

Keep **FF** pressed during fast forward.
Keep **REW** pressed during rewind.

REW ◂◂ FF ▸▸

To playback the Recorded Part Repeatedly

Keep **PLAY** pressed for more than 5 seconds.

PLAY ▷

- Press **STOP** to release from Repeat Playback mode.

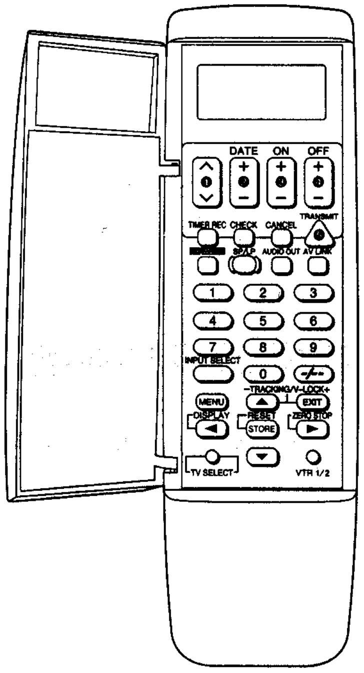
To return to a Specified Scene

1 Press **RESET** to set the counter to 0:00.00.

RESET STORE

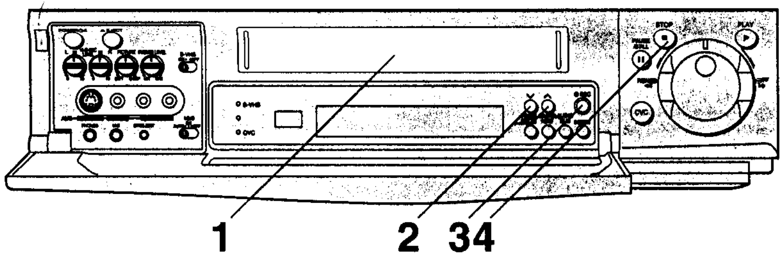
2 After playback, press **ZERO STOP** in the stop mode.
- The tape will be rewound or fast forwarded to 0:00.00 approximately.

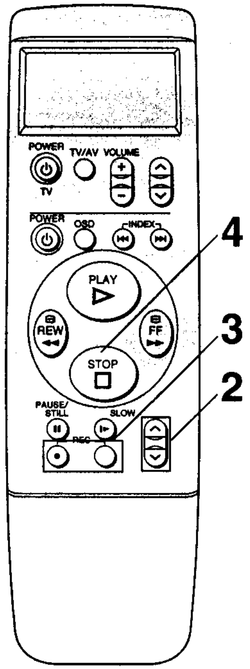
ZERO STOP ▶

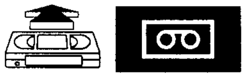
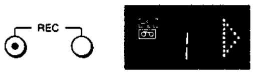
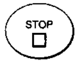

DATE
ON
OFF
TIMER REC
CHECK
CANCEL
TRANSMIT
AUDIO OUT
AV LINK
1
2
3
4
5
6
7
8
9
INPUT SELECT
0
TRACKING/V-LOCK
MENU
EXIT
DISPLAY
RESET
STORE
ZERO STOP
TV SELECT
VTR 1/2

Notes:
- Audio reproduction of linear (conventionally recorded) tapes will be monaural when played back on the FM Hi-Fi video recorders.
- Cue, review or slow playback will be automatically released after 10 minutes, and still playback after 5 minutes.
- In LP mode only:
  1. During any playback mode other than normal playback, the picture may have some noise bars, the colour may be unstable, or a black and white picture may appear.
  2. When playing back a tape which was recorded on another VTR, it may be necessary to adjust the Tracking Control. In some cases the picture quality may still be inferior. This is due to limitation of format.

Manual Recording





Operations	Display Symbols	
1		Insert a cassette tape. ●If it has already been inserted, press **POWER** to turn the VTR on.
2		Select TV station.
3		Start recording.
4		Stop recording.

To select the Desired Tape Speed

Press **SP/LP** before recording.

To interrupt Recording

Press **PAUSE/STILL** during recording.
Press again to continue recording.

PAUSE/STILL

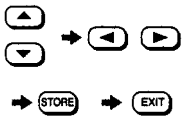
To record One TV Programme while Viewing Another Programme

1 Refer to the manual recording operations steps 1 to 3.

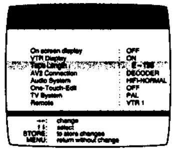
2 Select the TV programme on your TV set you wish to view at the present time.

To display the Approximate Remaining Tape Time

1 Select **Tape Length** from On Screen Display and select the corresponding cassette tape length. See page 35.



On Screen Display



On screen display : OFF
VTR Display : ON
Tape Length : [illegible]
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1

◄►: change
▲▼: select
STORE: to store changes
MENU: return without change

◄ E-180: For E30, -60, -90, -120 and -180 tapes.
E-195: For E195 tape.
E-240: For E240 tape.
E-260 ►: For E260 and -300 tapes.

2 Press **DISPLAY**.

DISPLAY
REMAIN
1:05

→Clock→Counter→**Remaining Tape Time**

- The remaining tape time may not be displayed correctly depending on the tape used.

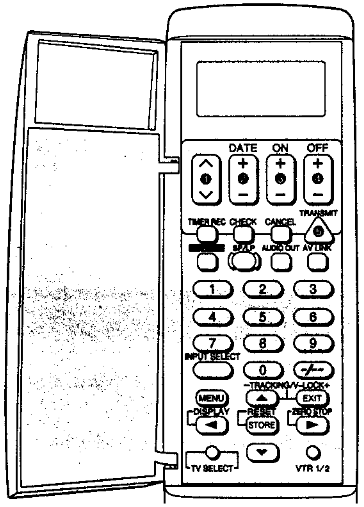
Recording of Stereo and Bilingual Programmes

1 Recording are automatically made in the stereo or bilingual mode. This prevents errors in the selection of the dubbed or the original language.

2 During playback press **AUDIO OUT** to select the desired sound mode. See page 5.

Notes:

- When a video cassette with a broken off tab is inserted, the "▣" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes, and be back to the stop mode.



The NICAM Broadcast System (NV-HS900EC only)

NV-HS900EC is equipped with the NICAM sound system also.
NICAM is a 2 Channel sound broadcast system to provide either a high quality stereo sound track or 2 independent MONO sound tracks, M1 and M2.
NICAM programmes are always accompanied by standard sound broadcasts and you can select the desired sound with **AUDIO OUT** during playback.

- The NICAM digital stereo sound can only be recorded on the Hi-Fi audio track.
- To record the regular sound (ordinary normal sound) on the FM audio tracks when a Stereo, Bilingual or NICAM programme is received, select **Mono ON** during manual tuning procedure. See page 30.

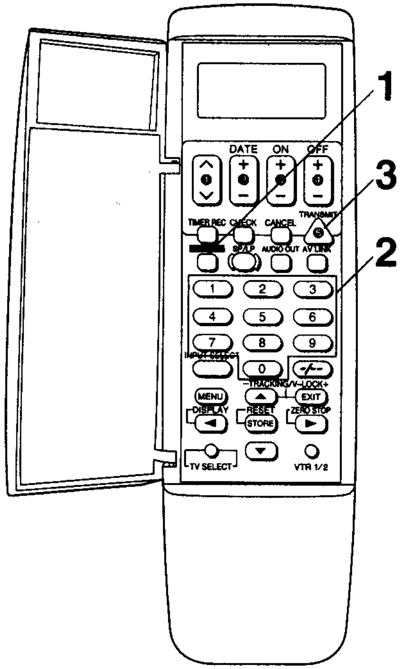
Important Note for the NICAM System

When NV-HS900EC is switched on, the tuner will automatically switch to a NICAM broadcast, if NICAM is being transmitted. During test transmissions, it is possible that the sound received doesn't correspond to the picture being viewed. In order to receive a synchronized sound and picture, select monaural sound with **AUDIO OUT** or **Mono ON** setting. This will only apply until NICAM transmissions are fully operational.
At this time the NICAM signal is transmitted on stereo channels only, since the M1 and M2 formats are not yet available. Even if the sound track is in MONO, the stereo indicator will appear.

Timer Recording

ShowView Programming

Programming is now easier than ever: simply enter the ShowView number provided in the programme schedule column carried by newspapers and magazines. ShowView numbers are numbers which are assigned to each programme listed in the TV programme schedule carried in newspapers and TV guides. When these numbers are entered and **TRANSMIT** is pressed, the numbers are converted into the actual programming.

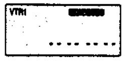

1
3
2
DATE
ON
OFF
TIMER REC
CHECK
CANCEL
TRANSMIT
SP/LP
AUDIO OUT
AV LINK
1
2
3
4
5
6
7
8
9
0
INPUT SELECT
-/--
TRACKING/V-LOCK
MENU
EXIT
DISPLAY
RESET
STORE
ZERO STOP
TV SELECT
VTR 1/2

Preparations

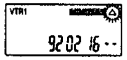
- Insert a cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VTR viewing channel is selected.

Operations **Display Symbols**

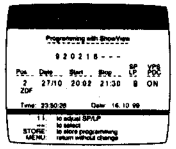
1 Press **SHOWVIEW.**



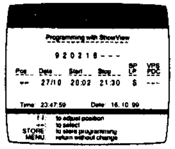
2 Enter a ShowView number.
Example: 920216


VTR1
92 02 16 --

3 Press **TRANSMIT.** **On Screen Display**



- The VTR will be in the timer recording standby mode after about 1 minute.
- If the "--" appears in the programme position:



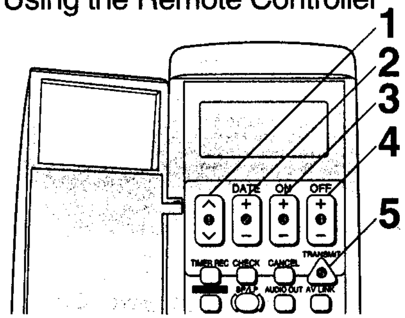
select the programme position of your VTR which receives the TV station you entered at step **2** using button ▲ or ▼.

- To extend the ending time or to make any corrections, use buttons ▲ ▼ ◀ ▶.

Notes:

- To release from the standby mode, press **TIMER REC**.
- When the ShowView number is used for programming, the recording time may be slightly longer than the actual programme time.
- When programming two or more programmes, repeat steps **1–3**.
- The procedures for checking and cancelling a timer programme are the same as on page 21.

Using the Remote Controller


1
2
3
4
5
DATE
ON
OFF
TIMER REC
CHECK
CANCEL
TRANSMIT
SP/LP
AUDIO OUT
AV LINK

For Example:

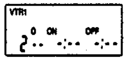
Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30

Preparations

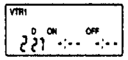
- Insert a cassette tape with an intact erasure prevention tab.
- Open the door of the remote controller.

Operations **Display Symbols**

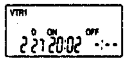
1 Set Programme position (channel) "2".


VTR1
D ON OFF
2 -- -:-- -:--

2 Set Date "27".

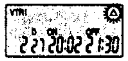

VTR1
D ON OFF
2 27 -:-- -:--

3 Set Starting time "20:02".

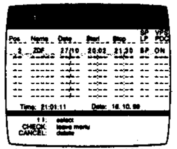

VTR1
D ON OFF
2 27 20:02 -:--

- When it is kept pressed, the indication changes in 30-minute steps.

4 Set Ending time "21:30".


VTR1
D ON OFF
2 27 20:02 21:30

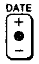
5 Press **TRANSMIT.** **On Screen Display**

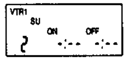


- The VTR will be in the timer recording standby mode after about 10 seconds.
- To release from the standby mode, press **TIMER REC.**

Weekly Timer Recording

In step **2**, select the desired day by pressing **DATE –**.
For example, SU (Sunday)




VTR1
SU
ON OFF
2 -:-- -:--

(SU=Sunday, MO=Monday, TU=Tuesday, WE=Wednesday, TH=Thursday, FR=Friday, SA=Saturday)

Daily Timer Recording

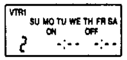
For this timer function, several groups of days can be selected.

Ⓐ Daily recording from Monday to Friday

Ⓑ Daily recording from Monday to Saturday

Ⓒ Daily recording from Sunday to Saturday

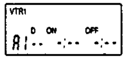
In step **2**, select the desired days by pressing **DATE –**.
For Example, Ⓒ


VTR1
SU MO TU WE TH FR SA
ON OFF
2 -:-- -:--

Timer Recording from External Signal Source

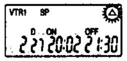
If Timer Recording is performed by a unit connected to the AV1 (TV), AV2 (DECODER/EXT) Sockets or AV3 (Audio/Video input sockets), select the A1, A2 or A3 indicator for the programme position.

A1: Through the AV1 (TV) socket.
A2: Through the AV2 (DECODER/EXT) socket.
A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.


VTR1
D ON OFF
A1 -- -:-- -:--

Selecting the Desired Tape Speed

Press **SP/LP** in any of steps **2–4**.


VTR1 SP
D ON OFF
2 27 20:02 21:30

Checking and Cancelling a Timer Programme

The procedures for checking and cancelling a timer programme are the same as on page 21.

Using On Screen Display

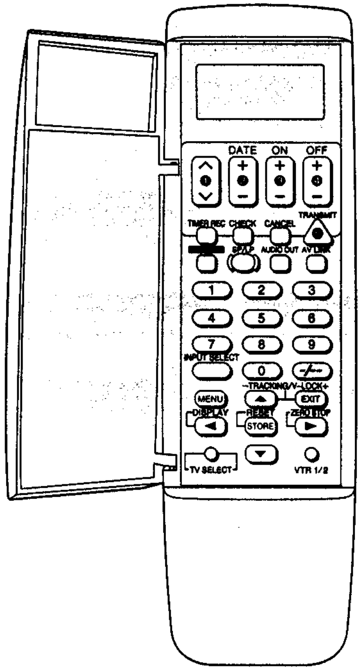
Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including weekly and daily programmes.

Preparations

- Insert a cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VTR viewing channel is selected.

For Example:

Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30
(Present date; 16th, October)	

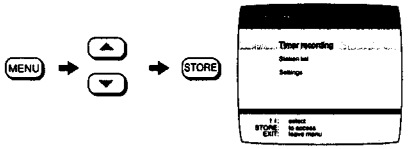


Follow the operation guide on screen display.

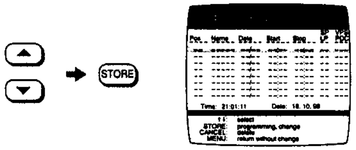
Operations

1 Press MENU, and then select Timer recording.

On Screen Display

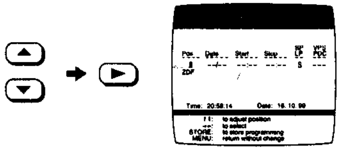


2 Select the unoccupied position.

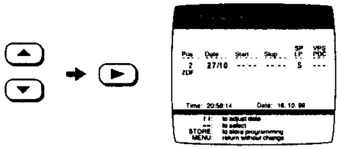


3 Set Programme position (channel) "2".

- Press ◄ to return to the previous item.

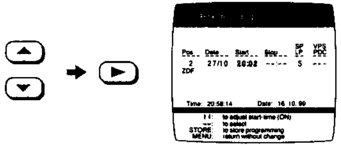


4 Set Date "27/10".



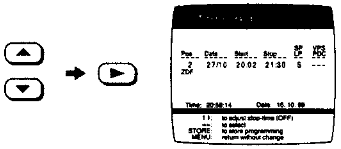
5 Set Starting time "20:02".

- When it is kept pressed, the indication changes in 30-minute steps.

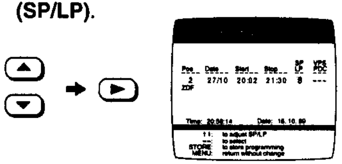


6 Set Ending time "21:30".

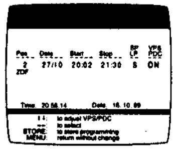
On Screen Display



7 Select the desired Tape speed (SP/LP).



8 Select VPS/PDC ON or OFF (---).



9 Press STORE.

10 To activate timer recording, press TIMER REC.

Weekly Timer Recording

In step **4**, select the desired day by pressing ▼.

Daily Timer Recording

For this timer function, several groups of days can be selected.

Ⓐ Daily recording from Monday to Friday

Ⓑ Daily recording from Monday to Saturday

Ⓒ Daily recording from Sunday to Saturday

In step **4**, select the desired days by pressing ▼.

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1 (TV), AV2 (DECODER/EXT) Socket or the Audio/ Video input sockets, select the A1, A2 or A3 for the programme position.

A1: Through the AV1 (TV) socket.
A2: Through the AV2 (DECODER/EXT) socket.
A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.

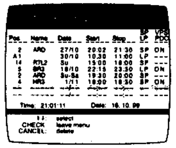
Setting other Programmes in Succession

Repeat steps **2–9**.

Checking a Timer Programme

- The VTR must be turned on, or the timer recording indicator "⌚" is lit.
- Confirm that the TV is on and the VTR viewing channel is selected.

Press **CHECK**. CHECK



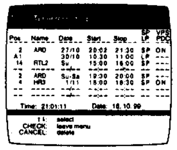
- On Screen Display may be distorted in the PDC/VPS recording standby mode.

Cancelling a Timer Programme

- The VTR must be turned on, or the timer recording indicator "⌚" is lit.
- Confirm that the TV is on and the VTR viewing channel is selected.

1 Press **CHECK**. CHECK
2 Select the desired timer programme.
3 Press **CANCEL**.

CANCEL



Note:

If a timer recording is not performed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. the next day.

However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.

PDC (Programme Delivery Control)/VPS (Video Programme System)

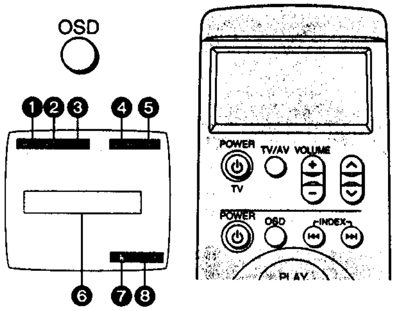
The Programme Delivery Control (PDC) or the Video Programme System (VPS) is a very convenient system which assures that the TV programmes you have programmed for timer recording will be recorded exactly from beginning to end, even if the actual broadcasting time differs from the scheduled time due to delayed start or extension of the programme duration. Also, if a programme is interrupted and, for example, some special news are inserted, the recording will also be interrupted automatically and resumed when the programme continues.

- In the case of PDC/VPS recording, use the **correct** time (PDC/VPS time) for recording the TV programmes. PDC/VPS recording is not performed when the time (PDC/VPS time) is incorrect, even if only by one minute.
- If the actual broadcasting times of timer recordings overlap (regardless of whether they are PDC/VPS controlled), the recording that starts first has always priority, and the recording of the later beginning programme will start only after the first timer recording has finished.
- When the PDC/VPS signal drops out because the broadcast signal is weak, or when a broadcasting station does not transmit a regular PDC/VPS signal, the timer recording will be performed in the normal mode (without PDC/VPS) even if it was programmed for PDC/VPS.
  In this case, even if the timer recording is performed, whatever has been programmed will not be cancelled at that particular time but at 4 a.m. on the following day.

Other Functions

On Screen Display

Press **OSD** to make the On Screen Display appear on the TV screen.



❶ **TV station**

❷ **TV system**

❸ **Stereo or Bilingual Indicator**
When receiving a TV programme, the type of sound system in which it is broadcast is automatically indicated.

❹ **Audio Output Mode Indicators**
The Left (L) and Right (R) Indicators show which sound mode is selected with **AUDIO OUT**.
Stereo: Both the L and R Indicators appear.
Left: The L Indicator appears.
Right: The R Indicator appears.
Normal: Both the L and R Indicators don't appear.

❺ **Tape speed indicator**

❻ **Error message**

❼ **Tape running display**

Stop, Eject	▮
Rewind	◀◀
Fast Forward	▶▶
Playback	▶
Recording	●
Repeat Playback	R
Insert Editing	INSERT
AV Insert Editing	AV INSERT
Audio Dubbing	A DUB

❽ **Present time/Tape counter**

Information	Display
Present time	17:24:31
Tape counter	−2:35.47
Remaining tape time	REMAIN 2:34

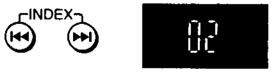
Notes:
- On Screen Display may be disturbed or disappear during special playback.
- When the item **"On screen display"** is set to OFF, the On Screen Display will not appear. (See page 34.)

VHS Index Search System

It is very easy to find the beginning of each recording, because a special index signal is recorded at the start of each recorded segment on the tape.

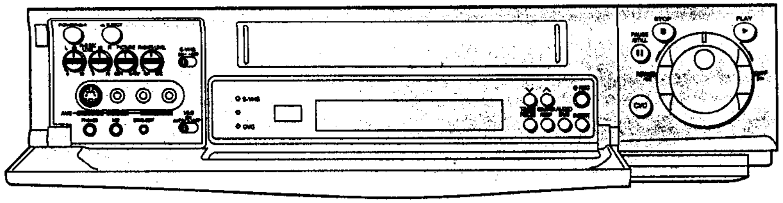
For example:
Searching for the 2nd recorded segment in the forward direction.

Press **INDEX ▶▶I** twice.



- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX I◀◀**.
- Up to 20 index signals can be searched for in both directions.
- When the opposite **INDEX** button is pressed, the number shall be decreased till 1.
- The figure on the display is decremented by 1 each time an index signal is located.
- The INDEX search function can only work correctly, if the index signals are spaced at least 3 minutes apart in the SP mode and 5 minutes apart in the LP mode.

Recording Index Signals
Index signals are recorded in following cases.
- When a recording is started by pressing **REC**.
- When **REC** is pressed during recording.
- When timer recording is activated.



NTSC Playback

Tapes recorded in the NTSC system can be played back with this VTR via a PAL system TV set.

- The playback picture may roll up or down. If the TV set is equipped with a V-HOLD control, it may be possible to stop the picture movement by adjusting this control.
- Depending on the TV set used, the picture may be in black and white. However, this is not an indication of a malfunction.

Other Automatic Functions

Automatic Playback

When a cassette without an erasure prevention tab is inserted, the VTR starts playback automatically.

VTR-off Playback

When the VTR is off, an inserted cassette can be played back by pressing **PLAY**.

Automatic Rewinding

When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

Automatic Switching Off and Ejection

When the VTR is switched off, and inserted cassette can be ejected simply by pressing **EJECT**. The VTR will eject the cassette and automatically turn itself off again.

Editing

Assembly Editing

This function can be used to make up an edited tape from other recordings or video sources.

A new scene can be added to the end of a previous one.

Preparations

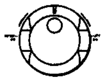
- Connect a movie camera or another VTR to this VTR as shown.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.

Operations

1 Press **PAUSE/STILL** on the recording VTR.

PAUSE/STILL

2 Search for the end of the previous recording.



3 Press **REC** to switch the VTR from the pause mode to the recording standby mode.

● REC

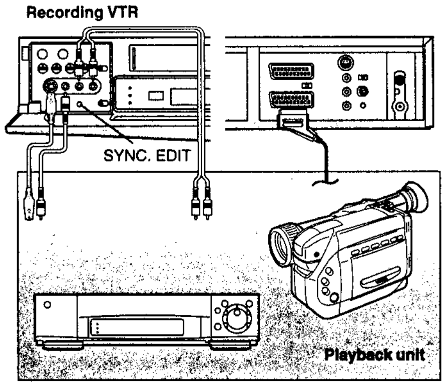
4 Start the new recording by pressing **PAUSE/STILL** again.

PAUSE/STILL

5 Press **STOP** to stop recording.

STOP

Note:
The new sound will be recorded on both the normal and HI-FI sound tracks, only monaural sound recording is possible on the normal sound tracks.



Synchronized Editing

It is possible to synchronize the playback start and stop of the Movie Camera with the recording start and stop of this VTR.

Preparations

- Connect a Movie Camera to this VTR with Synchro Connection Cord (VW-K1E).
- Select **One-Touch-Edit** to OFF for synchronized editing. (See page 36.)

1 Put the VTR in the recording pause mode by pressing **REC** and **PAUSE/STILL**.

2 Put the Movie Camera in the still playback mode at the point where you want to start editing.

3 Press **PAUSE/STILL** on the VTR.
- The Movie Camera changes over to the playback mode and the dubbing will start automatically.

Synchronized Editing between the VTRs
When editing from another VTR equipped with Synchro Edit Socket, synchronized start and stop of both VTRs can be activated from this VTR.

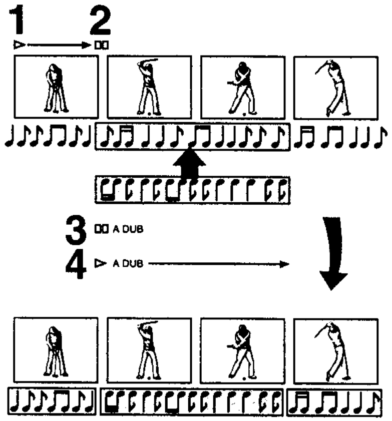
The operation is the same as described for synchronized editing from a Movie Camera.

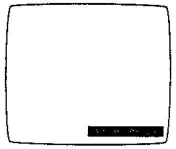
Audio Dubbing

The audio dubbing is made on the normal audio track and erases the original sound on this track. On Hi-Fi audio tracks, however, the original sound is maintained.

Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  A1: Through the AV1 (TV) socket.
  A2: Through the AV2 (DECODER/EXT) socket.
  A3: Through the AV3 (AUDIO IN) sockets on front panel.



Operations	Display Symbols	
1 PLAY		Search for the starting point for audio dubbing.
2 PAUSE/STILL		Press **PAUSE/STILL** at the starting point.
3 AUDIO DUB	**On Screen Display** 	Set for audio dubbing by pressing **AUDIO DUB**. ●On some televisions, the screen image may become unstable or begin to scroll at this point. However, this is not an indication of a malfunction.
4 PAUSE/STILL		Start recording the new sound by pressing **PAUSE/STILL**. ●Stop recording by pressing **STOP**.

Note:
The new sound will be recorded on the normal sound track of the tape, and the original sound will remain on the Hi-Fi sound track. Only monaural sound recording is possible on the normal sound track.

To hear the new sound, select the normal sound track by pressing **AUDIO OUT**.
To hear the new sound and original sound mixed together, set **Audio System** to HIFI-MIX. (See page 35.)

Audio dubbing with Panasonic HI-FI VTR

General
a) Due to VHS format reasons, audio dubbing can be performed only on the normal audio track.
b) The Hi-Fi audio tracks cannot be influenced without erasing the video signal.
c) The audio dubbing function is provided with an automatic recording function. The volume level cannot be adjusted. When dubbing to the Hi-Fi VTR, the volume level must be considered in advance.
d) There are three types of audio dubbing (A–C):

A. Audio dubbing on the normal audio track

1. Select the desired AV input.
1.2. The microphone input may also be selected. In this case, the microphone signal has priority. Disconnect the microphone when other audio signals are to be used.
2. Locate the recording starting point and press **PLAY-PAUSE**.
3. Press **AUDIO OUT** three times to select the normal audio track.
4. Press **AUDIO DUB**.
5. Start audio dubbing by releasing the pause function.
6. After audio dubbing has been completed, rewind the tape and make sure that the normal audio track is selected. (Step 3)
7. Check the audio dubbing.

B. Audio dubbing on the normal audio track with Hi-Fi Mix function

1. Select the desired AV input.
2. Locate the recording starting point and press **PLAY-PAUSE**.
3. The Hi-Fi tracks should be set to playback.
   - When a videocassette is inserted, the Hi-Fi tracks are automatically set to playback.
   - Hi-Fi tracks must be recorded. Copy the audio signal, if necessary.
4. Press **AUDIO DUB**.
5. Start audio dubbing by releasing the pause function.
6. After audio dubbing has been completed, rewind the tape and set **Audio System** to HIFI-MIX. (See page 35.)
7. Check the audio dubbing.
   The original sound and the new sound are heard simultaneously.

C. Audio dubbing on the normal audio track with original sound and new sound

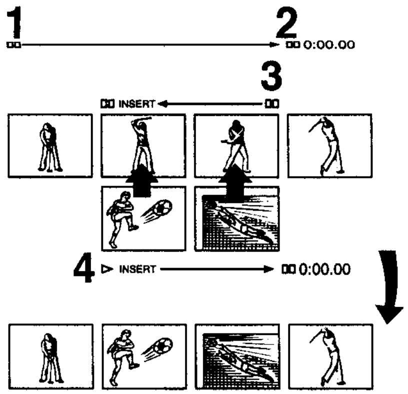
1. Select the desired AV input.
2. Locate the recording starting point and press **PLAY-PAUSE**.
3. The Hi-Fi tracks should be set to playback.
   - When a videocassette is inserted, the Hi-Fi tracks are automatically set to playback.
   - Hi-Fi tracks must be recorded. Copy the audio signal, if necessary.
4. Press **AUDIO DUB**.
   - Input the original signals of the Hi-Fi tracks (Audio-Out) to a mixing console (optional) and mix with the new sound as required.
5. Start audio dubbing by releasing the pause function.
6. After audio dubbing has been completed, rewind the tape and make sure that the normal audio track is selected. (Step 3)
7. Check the audio dubbing.

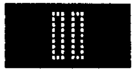
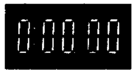
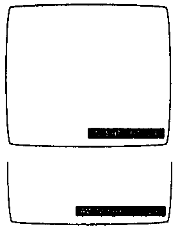
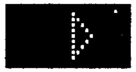
Insert Editing

This is used to substitute one scene for another providing.

Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  A1: Through the AV1 (TV) socket.
  A2: Through the AV2 (DECODER/EXT) socket.
  A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.



Operations		**Display Symbols**	
1	PAUSE/STILL		Press **PAUSE/STILL** on recording the VTR.
2	COUNTER RESET		Search for the Edit out (ending) point, and set the counter to 0:00.00 by pressing **COUNTER RESET**.
3	INSERT	**On Screen Display** 	Search for the Edit in (starting) point, and press **INSERT**. •If you want to replace the sound on the "normal" audio track, press **AUDIO DUB**, too. (AV Insert Editing)
4	PAUSE/STILL		Start insert editing by pressing **PAUSE/STILL**. •The insert editing will finish when the counter reaches 0:00.00.

Note:
Insert Editing cannot be used on blank sections of a tape. In this case use Assembly Editing first.

The new sound will be recorded on the Hi-Fi sound track. If AUDIO DUB selected, the new sound will also be recorded on the normal sound track.

Only monaural sound recording is possible on the normal sound tracks.

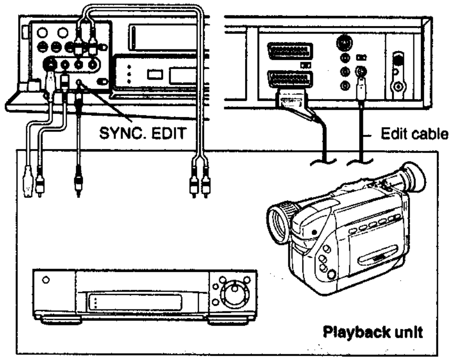
One-Touch-Editing

With this editing, it is easy to perform repeated assemble editing, insert editing or audio dubbing operations.

Preparations

- Before proceeding with the connections, check that the AC mains lead of both VTRs have been connected.
- Before the VTR is connected to a movie camera or another VTR, select **One-Touch-Edit** to ON. (See page 36.) The playback VTR display or movie camera viewfinder image may be abnormal if the edit cable is connected with **One-Touch-Edit** left OFF.
- Connect a movie camera or another VTR to this VTR as shown.
- Use the **SYNC. EDIT** socket when connecting this unit to a VTR or movie camera equipped with a LANC socket.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  A1: Through the AV1 (TV) socket.
  A2: Through the AV2 (DECODER/EXT) socket.
  A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.
- Upon completion of the One-Touch Editing, disconnect the edit cable.

Recording VTR



Operations

1 Press **PAUSE/STILL** on the recording VTR.

PAUSE/STILL

2 Search for the end of the previous recording.

3 Press **REC** to switch the VTR from the pause mode to the recording standby mode.

REC

- The playback VTR will be in still mode.
- If **INSERT** or **AUDIO DUB** is pressed instead of **REC**, Insert Editing or Audio Dubbing can be performed.

4 Search for the Edit in (starting) point on the playback VTR.

5 Start One-Touch-Editing by pressing **PAUSE/STILL** again.

PAUSE/STILL

6 Press **PAUSE/STILL** at the Edit out (ending) point on the playback VTR.

PAUSE/STILL

- For Editing in succession, repeat **4** to **6**.

7 Press **STOP** to stop editing.

STOP

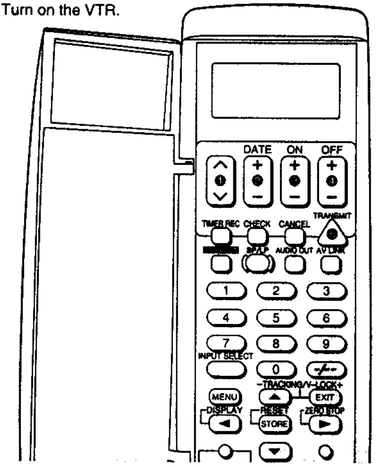
Storing TV Broadcasts into your VTR

Introduction

The VTR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.
If VTR is not correctly tuned by Auto setup, follow the procedure bellow.

Preparations

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.


DATE
ON
OFF
TIMER REC
CHECK
CANCEL
TRANSMIT
SP/LP
AUDIO OUT
AV LINK
1
2
3
4
5
6
7
8
9
0
INPUT SELECT
-/--
-TRACKING/V-LOCK+
MENU
EXIT
DISPLAY
RESET
ZERO STOP
STORE

Manual Tuning Procedure

Follow the operation guide on screen display.

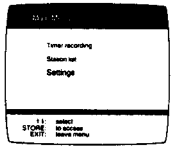
Operations

1 Press **MENU**.

2 Select **Settings**.

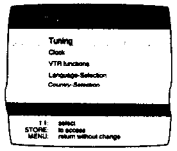
▲ ▼ → STORE

On Screen Display


Timer recording
Station list
Settings
↑↓: select
STORE: to access
EXIT: leave menu

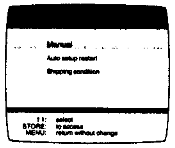
3 Select **Tuning**.

▲ ▼ → STORE


Tuning
Clock
VTR functions
Language-Selection
Country-Selection
↑↓: select
STORE: to access
MENU: return without change

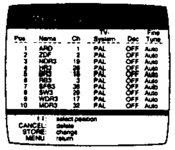
4 Select **Manual**.

▲ ▼ → STORE


Manual
Auto setup restart
Shipping condition
↑↓: select
STORE: to access
MENU: return without change

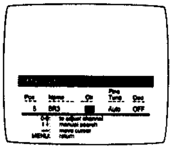
5 Select desired programme position.

▲ ▼ → STORE


Pos
Name
Ch
TV-System
Dec
Fine Tune
CANCEL
STORE
MENU

6 Select Channel **(Ch)**.

◄ ► → 0 – 9

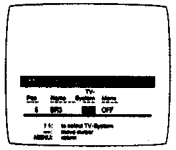


7 Select **Dec ON** or **Dec OFF**.
ON: To preset pay TV stations.
OFF: To preset normal TV stations.

◄ ► → ▲ ▼

8 Use ◄ ► to display the next screen.
Select **TV System**.
PAL: For receiving PAL signal.
MESECAM: For receiving SECAM signal.

▲ ▼



9 **NV-HS900EC only**
Select **Mono OFF**.
- Select **Mono ON** to record the normal sound during a stereo, bilingual or NICAM broadcast or if the stereo sound is distorted due to inferior reception conditions.

10 Press **MENU**, and then press **EXIT**.

Channel Plan

Channel Indication	TV Channel	
	Germany/Italy	**Other Countries**
2–12	*E2–E12	E2–E12
13–20	A–H (Only Italy)	—
21–69	21–69	21–69
74–76	—	S1–S3
80–82	—	M1–M3
83–89	S4–S10	M4–M10
90–99	S11–S20	U1–U10
121–141 Hyperband	**S21–S41	S21–S41

*In Italy: H1...(11), H2...(12)
**Only for 8 MHz channel raster

To change the programme position or TV station name:

After step **5** but before step **8**, select the programme position **(Pos)** or TV station name **(Name)** item using ◄ ►, and then make the desired change.

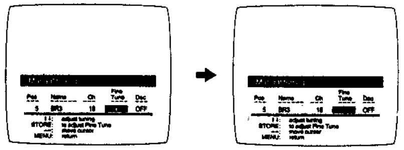
Fine Tuning Procedure

Follow steps **1** to **5** on page 30.

6 Select **Fine Tune**.

7 Press ▲ or ▼ to obtain the best tuning condition.
- To return the tuning to its former state, press **STORE**.

On Screen Display



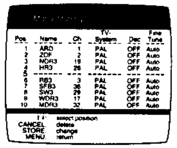
8 Press **MENU**, and then press **EXIT**.

Blanking of Unoccupied Programme positions

Follow steps **1** to **4** on page 30.

5 Select the desired TV station.

6 Press **CANCEL**.


Pos
Name
Ch
TV-System
Dec
Fine Tune
CANCEL
STORE
MENU

- Repeat steps **5** and **6** for another unoccupied programme positions to skip during the selection of the programme positions.

7 Press **EXIT**.

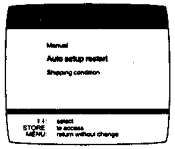
Auto Setup Restart

When your address changes, follow the procedure below.
Follow the steps 1 to 3 on page 30.

4 Select **Auto setup restart.**

On Screen Display

▲ ▼ → STORE

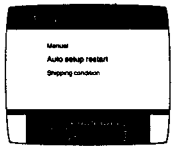


Manual
Auto setup restart
Shipping condition

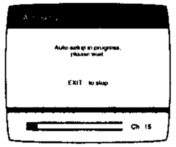
↑↓: select
STORE: to access
MENU: return without change

5 Press **STORE.**

STORE



Manual
Auto setup restart
Shipping condition



Auto-setup in progress,
please wait

EXIT to skip

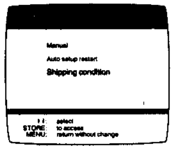
Ch 15

Shipping Condition

If you want to return the VTR to the factory-preset condition, follow the procedure bellow.
Follow the steps **1** to **3** on page 30.

4 Select **Shipping condition.**

▲ ▼ → STORE

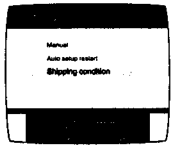


Manual
Auto setup restart
Shipping condition

↑↓: select
STORE: to access
MENU: return without change

5 Press **STORE.**

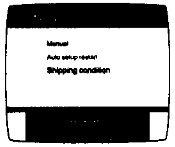
STORE



Manual
Auto setup restart
Shipping condition

6 Press **STORE** again.

STORE



Manual
Auto setup restart
Shipping condition

Note:
To re-tune VTR, disconnect mains lead and then reconnect mains lead. If VTR is off, turn on the VTR. Auto setup starts.

Setting the Clock of your VTR

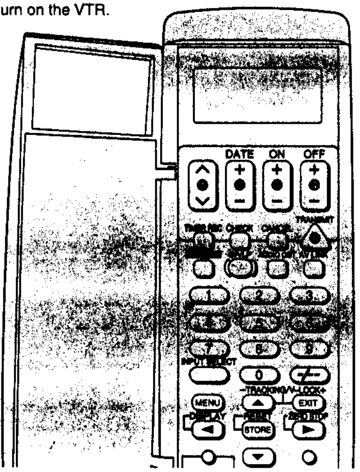
The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

If VTR is not correctly set by Auto setup, follow the procedure below.

Preparations

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR.



Manual Clock Setting

Follow the operation guide on screen display.

Operations

1 Press **MENU**, and then select **Settings.**
MENU → ▲ ▼ → STORE

2 Select **Clock.**
▲ ▼ → STORE

3 Select **Manual setting.**
▲ ▼ → STORE

4 Set **Time (H/M).**
- When it is kept pressed, the indication changes in 30-minute steps.
- Press ◀ to return to the previous item.

▲ ▼ → ▶

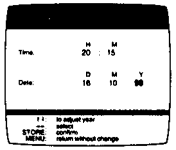
5 Set **Date (D).**
▲ ▼ → ▶

6 Set **Month (M).**
▲ ▼ → ▶

7 Set **Year (Y).**
- There is no need to press ▶.

▲ ▼

On Screen Display



Time. H 20 : M 15
Date: D 16 M 10 Y 98

↑↓: to adjust year
←→: select
STORE: confirm
MENU: return without change

8 Press **STORE.**
- The clock will start.

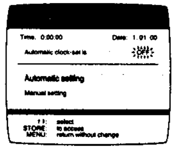
9 Press **EXIT.**

Automatic Clock Setting

Follow steps **1** to **2** of the above procedure.

3 Select **Automatic setting.**

▲ ▼



Time. 0:00:00 Date: 1.01 00
Automatic clock-set is OFF
Automatic setting
Manual setting

↑↓: select
STORE: to access
MENU: return without change

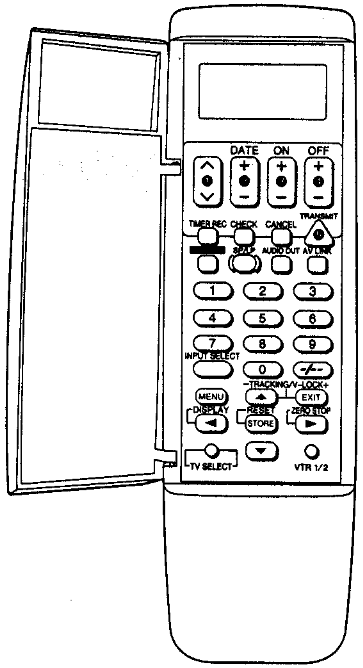
4 Press **STORE.**
- The clock is set automatically.

Notes:
- The clock operates for at least 60 minutes by its backup system in the event of power failure.
- When the item **"Automatic clock-set is"** is ON on screen display, Automatic time correcting function is activated.
The Automatic time correcting function is only activated when the power is off. This function is not activated during timer recording standby mode.

Settings Using On Screen Display

Preparations

- •Confirm that the TV is on and the VTR viewing channel is selected.
- •Turn on the VTR.

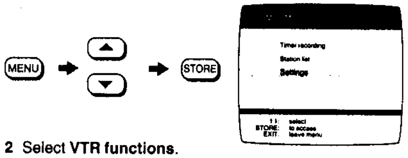

DATE
ON
OFF
TIMER REC
CHECK
CANCEL
TRANSMIT
SP/LP
AUDIO OUT
AV LINK
1
2
3
4
5
6
7
8
9
INPUT SELECT
0
-/--
-TRACKING/V-LOCK+
MENU
EXIT
DISPLAY
RESET
ZERO STOP
STORE
TV SELECT
VTR 1/2

VTR functions

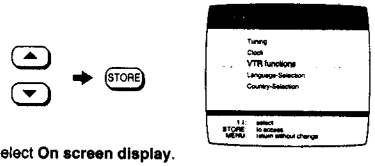
On Screen Display

1 Press **MENU**, and then select **Settings**.

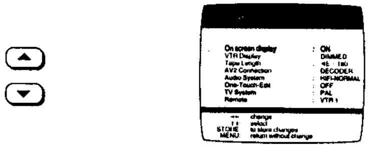
On Screen Display


MENU
STORE
Timer recording
Station list
Settings
↑↓: select
STORE: to access
EXIT: leave menu

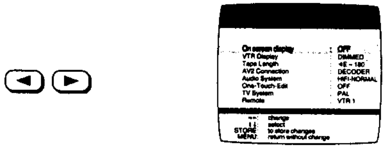
2 Select **VTR functions**.


STORE
Tuning
Clock
VTR functions
Language-Selection
Country-Selection
↑↓: select
STORE: to access
MENU: return without change

3 Select **On screen display**.


On screen display : ON
VTR Display : DIMMED
Tape Length : ◄E - 180
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

4 Select **ON** or **OFF**.

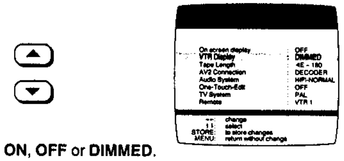

On screen display : OFF
VTR Display : DIMMED
Tape Length : ◄E - 180
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

ON:	The On Screen Display will appear on the TV screen by pressing **OSD**.
OFF:	The On Screen Display will not appear even if **OSD** is pressed.

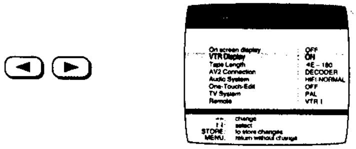
VTR Display

1 Select **VTR Display**.

On Screen Display


On screen display : OFF
VTR Display : DIMMED
Tape Length : ◄E - 180
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

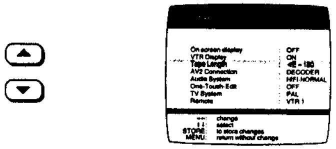
2 Select **ON**, **OFF** or **DIMMED**.


On screen display : OFF
VTR Display : ON
Tape Length : ◄E - 180
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

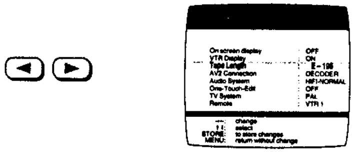
ON:	When VTR is turned off, the characters are lit in the VTR display.
OFF:	When VTR is turned off, the characters are not lit in the VTR display.
DIMMED:	When VTR is turned off, the characters are dimmed in the VTR display.

To select the Corresponding Cassette Tape Length for Displaying the Approximate Remaining Tape Time

1 Select **Tape Length**.


On screen display : OFF
VTR Display : ON
Tape Length : ◄E - 180
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

2 Select the corresponding cassette tape length.

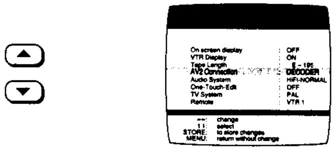

On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

◄ E-180:	For E30, -60, -90, -120 and -180 tapes.
E-195:	For E195 tape.
E-240:	For E240 tape.
E-260 ►:	For E260 and -300 tapes.

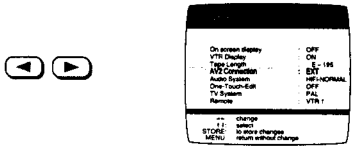
- •The times displayed may differ depending on the tape used.

AV2 Connection

1 Select **AV2 Connection**.


On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : DECODER
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

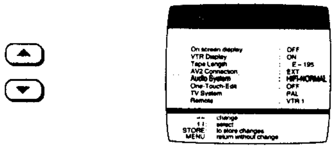
2 Select **EXT** or **DECODER**.


On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

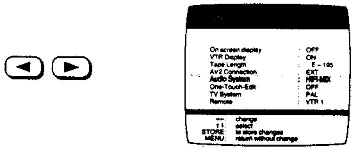
EXT:	When another VTR is connected to the AV2 (DECODER/EXT) socket.
DECODER:	When the decoder is connected to the AV2 (DECODER/EXT) socket.

Audio System

1 Select **Audio System**.


On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HIFI-NORMAL
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

2 Select **HIFI-NORMAL** or **HIFI-MIX**.

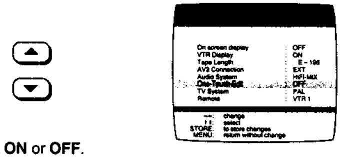

On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HIFI-MIX
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

HIFI-NORMAL:	Normally set at this position to reproduce the better sound available from the Hi-Fi track.
HIFI-MIX:	Both sound tracks (the Hi-Fi sound track and the normal sound track) are played back mixed together. Use this setting when playing back a cassette tape which has been insert edited or audio dubbed.

One-Touch-Edit

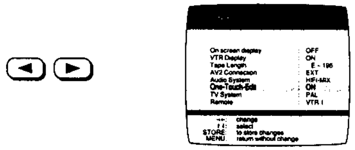
1 Select **One-Touch-Edit**.

On Screen Display



On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HiFi-MIX
One-Touch-Edit : OFF
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

2 Select **ON** or **OFF**.

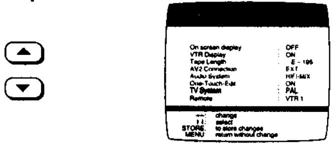


On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HiFi-MIX
One-Touch-Edit : ON
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

ON:	For One-Touch-Editing.
OFF:	For editing with editing controller or synchronized editing.

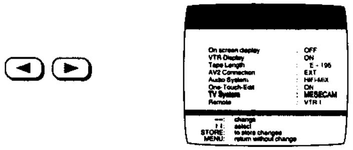
To set the Colour TV System

1 Select **TV System**.



On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HiFi-MIX
One-Touch-Edit : ON
TV System : PAL
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

2 Select **PAL** or **MESECAM**.

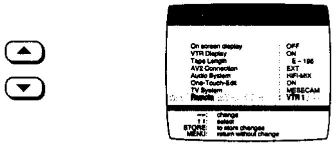


On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HiFi-MIX
One-Touch-Edit : ON
TV System : MESECAM
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

- Set according to the colour TV system used during playback or external recording.

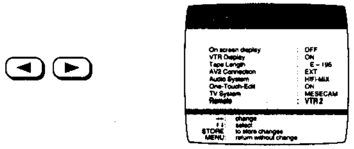
Remote Control Mode

1 Select **Remote**.



On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HiFi-MIX
One-Touch-Edit : ON
TV System : MESECAM
Remote : VTR 1
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

2 Select **VTR1** or **VTR2**.



On screen display : OFF
VTR Display : ON
Tape Length : E - 195
AV2 Connection : EXT
Audio System : HiFi-MIX
One-Touch-Edit : ON
TV System : MESECAM
Remote : VTR 2
←→: change
↑↓: select
STORE: to store changes
MENU: return without change

VTR1:	Set to this position on both the VTR and remote controller for normal use with one VTR.
VTR2:	Set to this position when using two Panasonic VTRs. This allows to operate VTR1 or VTR2 with remote controller.

- After changing the remote control mode, press **VTR1/2** to change the remote control mode of the remote controller. If this is not done, it will not be possible to operate the VTR using the remote controller.

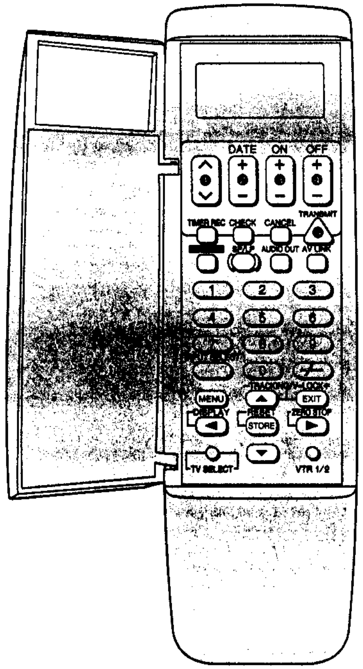
After All Settings are selected

Press **STORE**, and then press **EXIT** to make On Screen Display disappear.

STORE → EXIT

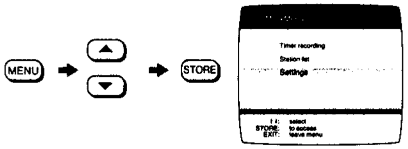
Language-Selection

To change the language setting for On Screen Display, follow the steps bellow.



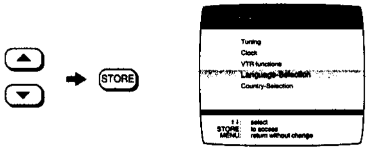
1 Press **MENU**, and then select **Settings**.

On Screen Display



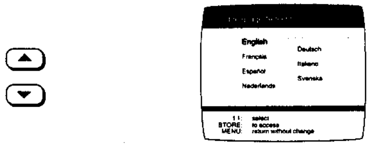
Timer recording
Station list
Settings
↑↓: select
STORE: to access
EXIT: leave menu

2 Select **Language-Selection**.



Tuning
Clock
VTR functions
Language-Selection
Country-Selection
↑↓: select
STORE: to access
MENU: return without change

3 Select the desired language.



English
Français
Español
Nederlands
Deutsch
Italiano
Svenska
↑↓: select
STORE: to access
MENU: return without change

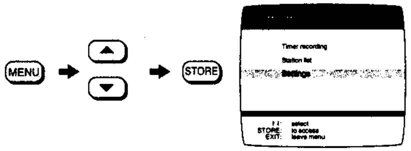
4 Press **STORE**, and then press **EXIT**.

STORE → EXIT

Country-Selection

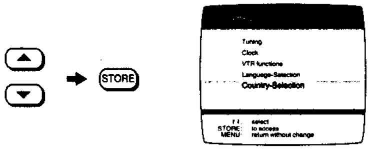
To change the country setting, follow the steps bellow.

1 Press **MENU**, and then select **Settings**.



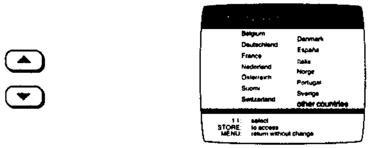
Timer recording
Station list
Settings
↑↓: select
STORE: to access
EXIT: leave menu

2 Select **Country-Selection**.



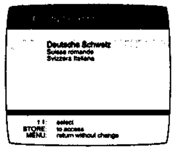
Tuning
Clock
VTR functions
Language-Selection
Country-Selection
↑↓: select
STORE: to access
MENU: return without change

3 Select the desired country.

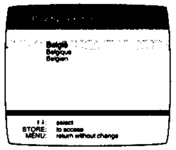


Belgium
Deutschland
France
Nederland
Österreich
Suomi
Switzerland
Danmark
España
Italia
Norge
Portugal
Sverige
other countries
↑↓: select
STORE: to access
MENU: return without change

- When Switzerland or Belgium has been selected, operation moves to the screen which follows. Select the item in accordance with the language required.



Deutsche Schweiz
Suisse romande
Svizzera italiana
↑↓: select
STORE: to access
MENU: return without change



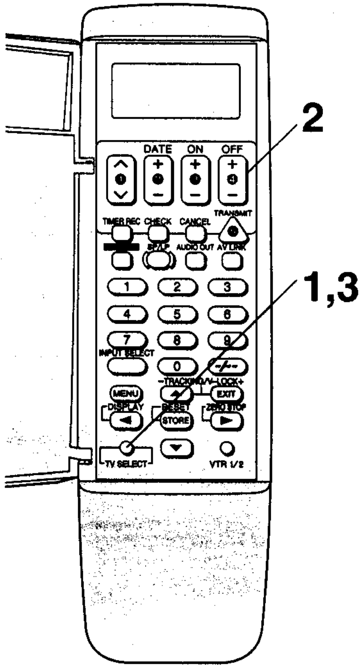
België
Belgique
Belgien
↑↓: select
STORE: to access
MENU: return without change

4 Press **STORE**, and then press **EXIT**.

STORE → EXIT

Setting the Remote Controller for Operation of your TV

You can operate some TV manufacturers (see next page) using the supplied Remote Controller after this setting up.

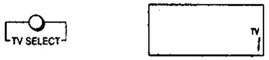


Preparation

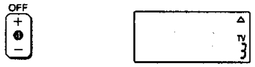
Turn on the TV.

Operations **Display Symbols**

1 Keep **TV SELECT** pressed for more than 2 seconds.



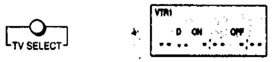
2 Press **OFF** several times.



- When the number matches the manufacturer of your TV, the TV's power is turned off.

Read through the information on the following page as well.

3 Press **TV SELECT**.



How to change the number

Each time the "+" side of **OFF** is pressed, the number is counted up by one as follows:

→1→2→3...28→

When the "−" side is pressed, the number is counted down by one in the reverse order to that indicated above.

Note:

Some TV models cannot be operated using this remote controller.

Number	Manufacturer
1–4	Panasonic
5	GRUNDIG, Blaupunkt, SIEMENS
6	PHILIPS, LOEWE, SAMSUNG, RADIOLA, DUAL, PYE, BUSH, GOODMANS, ELEMIS, CURTIS
7	SONY
8	METZ
9*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA
10*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS
11*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA
12*	FERGUSON, TELEFUNKEN, GOODMANS, SABA
13*	TELEFUNKEN
14*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA
15*	FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA, NORDMENDE, BRANDT
16*	TELEFUNKEN
17, 18	HITACHI
19	SIEMENS
20	SAMSUNG
21	ITT, NOKIA, SELECO
22	NOKIA, SALORA
23	MIVAR
24	TOSHIBA
25	SANYO
26	SHARP
27	JVC
28	MITSUBISHI

When a TV manufacturer has the plural number
For example, When the number is 1, 2, 3 or 4 (Panasonic):

When the TV's power is turned off in step **2** above, turn it back on and adjust the TV's volume using this remote controller. The volume can be adjusted if the number matches the TV manufacturer. If it is not possible to adjust the TV's volume, try setting the number (1 to 4) to match the TV manufacturer again until the volume can be adjusted.

***When the number is 9–16**

How to change the programme position of TV:

1. Press ∧ **(TV)** to make **POS** appear on screen display.
2. Press **VOLUME** + or −.
   - To adjust the TV's volume using the remote controller after that, press ∧ **(TV)** to make **POS** on screen display disappear and then adjust the volume. For some models, **POS** disappears automatically after several seconds. In these cases, this operation is not necessary.

Note:

FERGUSON, THOMSON, TELEFUNKEN, GOODMANS and SABA have plural numbers. Although some models may operate with any of these numbers, other models may operate with only one number. Check each number in turn, and set the optimal number.

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY METHOD

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing.
When reassembling, perform the steps in the reverse order.

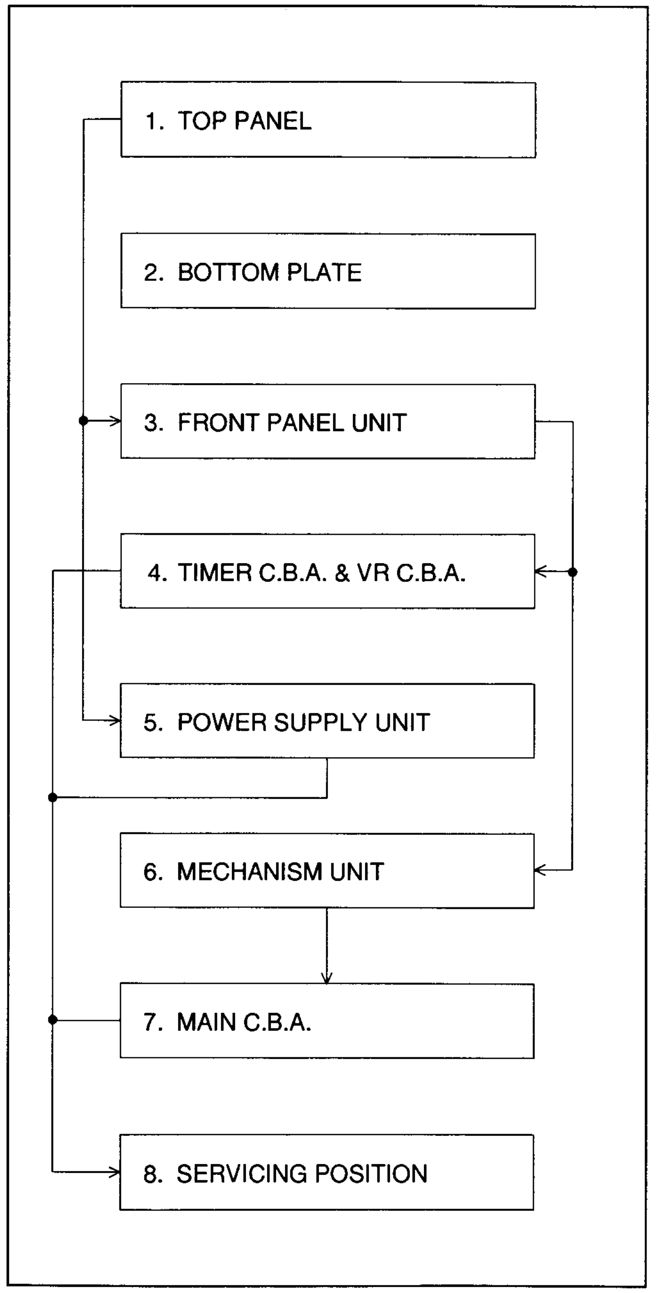

1. TOP PANEL
2. BOTTOM PLATE
3. FRONT PANEL UNIT
4. TIMER C.B.A. & VR C.B.A.
5. POWER SUPPLY UNIT
6. MECHANISM UNIT
7. MAIN C.B.A.
8. SERVICING POSITION

Fig. D1

2-1-2. DETAIL OF DISASSEMBLY METHOD

1. REMOVAL OF THE TOP PANEL

Remove...... 4 Screws (A)

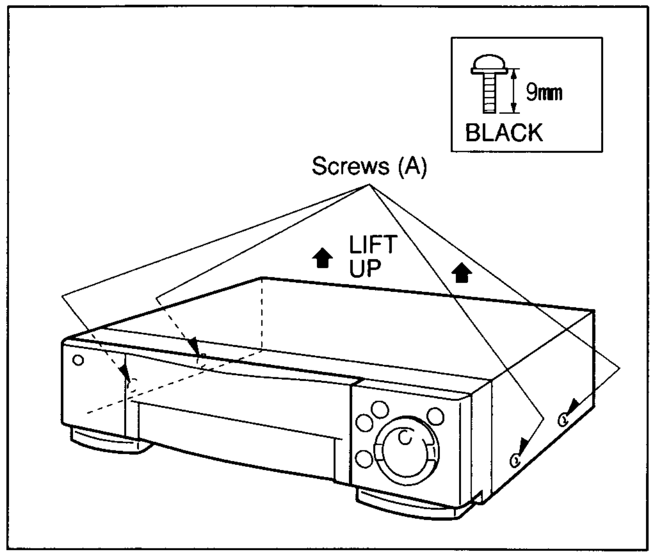

9mm
BLACK
Screws (A)
LIFT UP

Fig. D2

2. REMOVAL OF THE BOTTOM PLATE

Unlock .... 6 tabs (B)

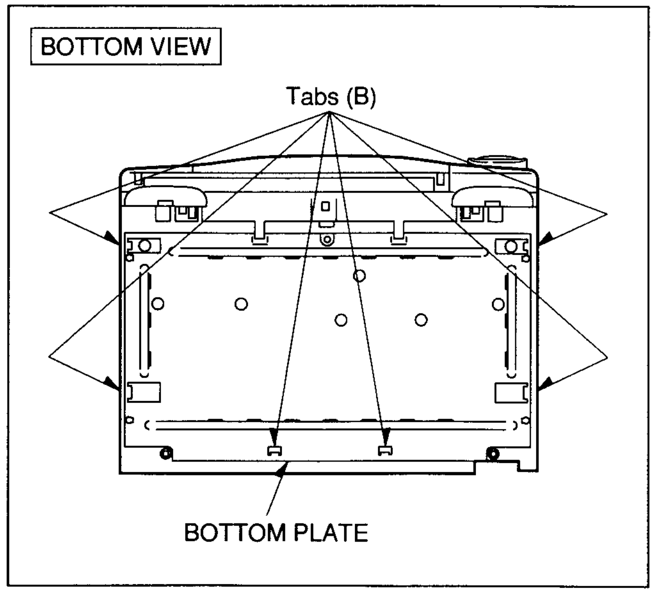

BOTTOM VIEW
Tabs (B)
BOTTOM PLATE

Fig. D3

3. REMOVAL OF THE FRONT PANEL UNIT

Pull out .... JOG & SHUTTLE Knob
Remove...... 2 Screws (C)
Unlock .... 11 Tabs (D)

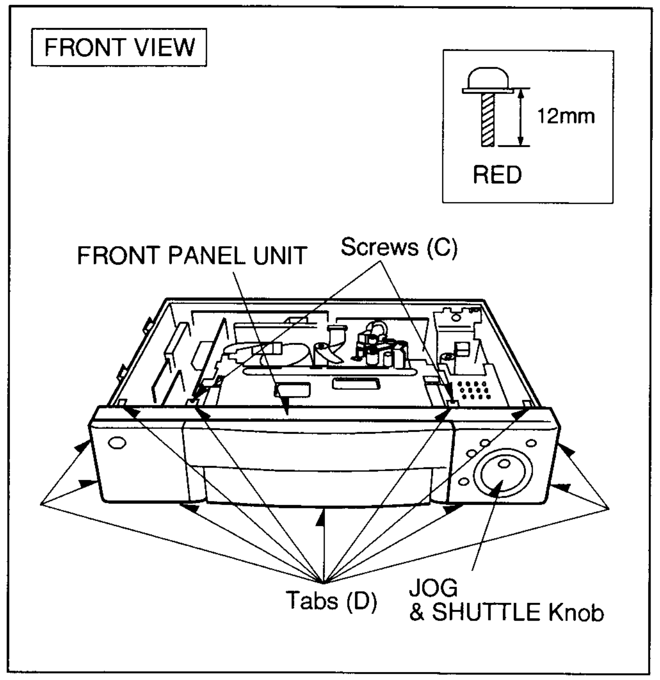

FRONT VIEW
12mm
RED
FRONT PANEL UNIT
Screws (C)
Tabs (D)
JOG
& SHUTTLE Knob

Fig. D4

4. REMOVAL OF THE TIMER C.B.A. & VR C.B.A.

REMOVAL OF THE TIMER C.B.A.
Disconnect........Bridge connector (E)
Unlock............... 5 Tabs (F)

REMOVAL OF THE VR C.B.A.
Disconnect........Bridge connector (E)
Unlock............... 2 Tabs (G)

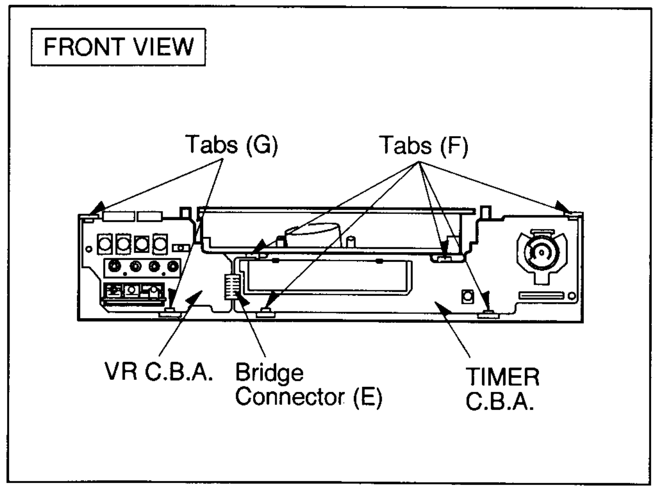

FRONT VIEW
Tabs (G)
Tabs (F)
VR C.B.A.
Bridge Connector (E)
TIMER C.B.A.

Fig. D5

5. REMOVAL OF THE POWER SUPPLY UNIT

Disconnect........Bridge connector (H)
Unlock............... 5 Tabs (I)
Unlock............... 2 Tabs (J)

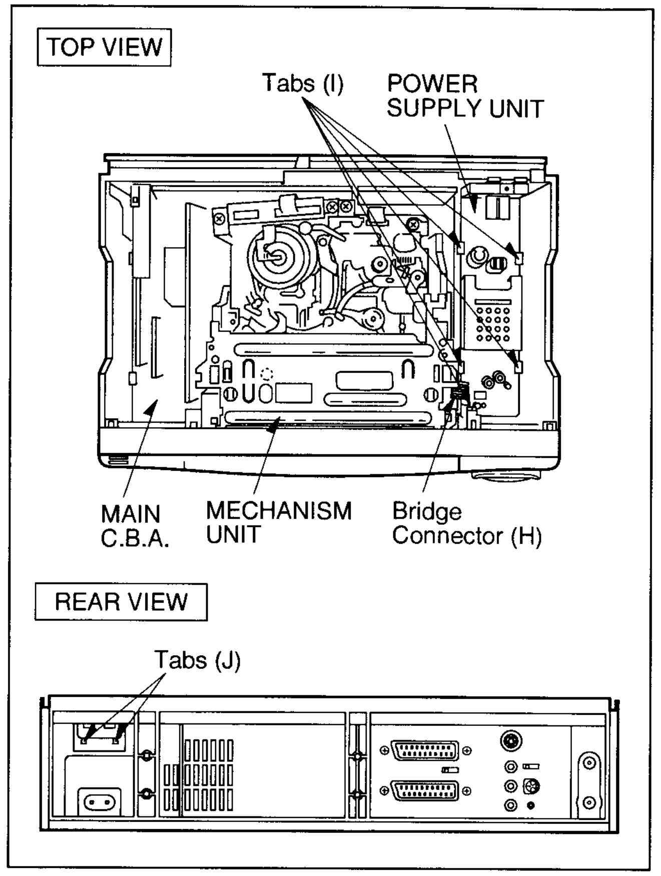

TOP VIEW
Tabs (I)
POWER SUPPLY UNIT
MAIN C.B.A.
MECHANISM UNIT
Bridge Connector (H)
REAR VIEW
Tabs (J)

Fig. D6

CAUTIONS:
Please pay an attention to disconnect the connector (P1001-P1102) which connected between Main C.B.A. and Power supply unit as shown below.

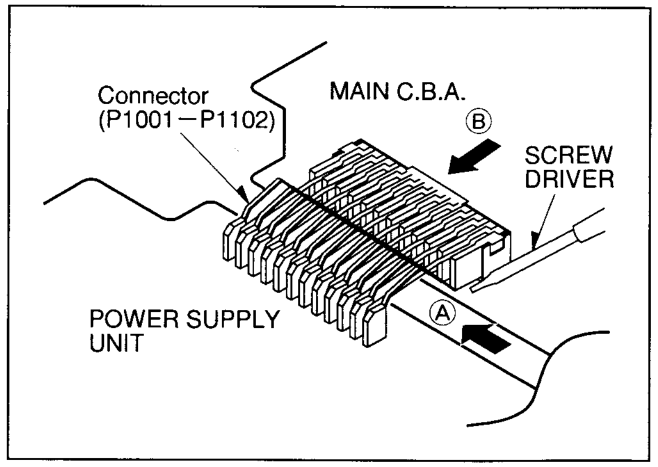

Connector
(P1001—P1102)
MAIN C.B.A.
Ⓑ
SCREW DRIVER
POWER SUPPLY UNIT
Ⓐ

Fig. D7

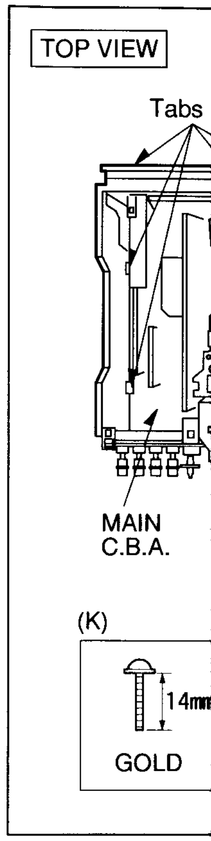
As above drawing, disconnect the connector by SCREW DRIVER from the direction Ⓐ.
Do not disconnect from direction Ⓑ because it is possibility to damage the parts located by the connector.

6. REMOVAL OF

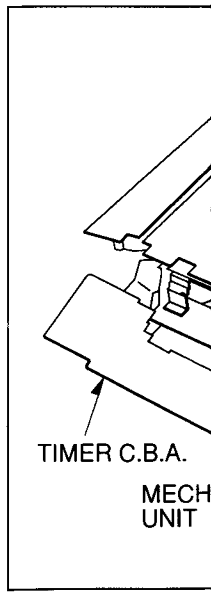
Remove 3
Remove .... S

7. REMOVAL OF

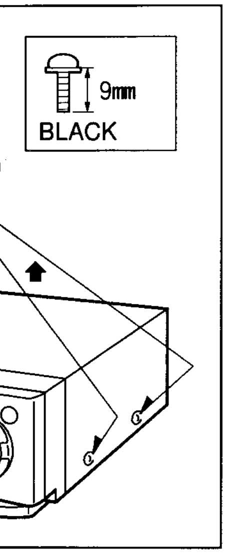
Disconnect ... E
Unlock........... 5


TOP VIEW
Tabs
MAIN C.B.A.
(K)
14m
GOLD

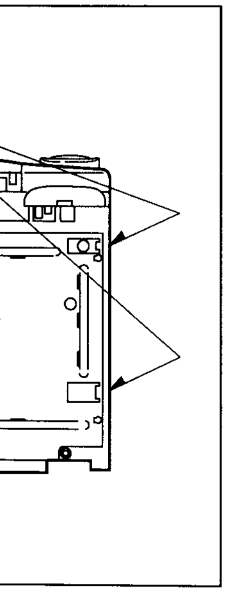
8. SERVICING PO


TIMER C.B.A.
MECH UNIT

THOD



TE



3. REMOVAL OF THE FRONT PANEL UNIT

Pull out .... JOG & SHUTTLE Knob
Remove ...... 2 Screws (C)
Unlock .... 11 Tabs (D)

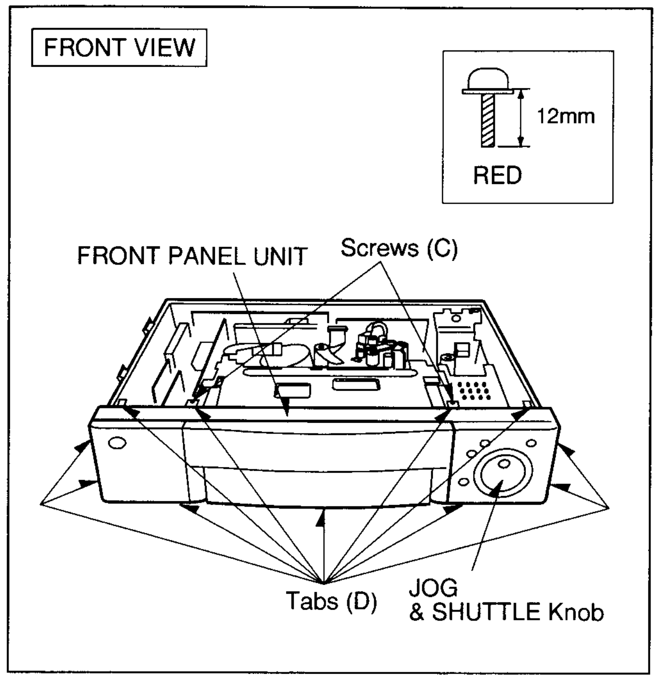

FRONT VIEW
12mm
RED
FRONT PANEL UNIT
Screws (C)
Tabs (D)
JOG
& SHUTTLE Knob

Fig. D4

4. REMOVAL OF THE TIMER C.B.A. & VR C.B.A.

REMOVAL OF THE TIMER C.B.A.
Disconnect........Bridge connector (E)
Unlock............... 5 Tabs (F)

REMOVAL OF THE VR C.B.A.
Disconnect........Bridge connector (E)
Unlock............... 2 Tabs (G)

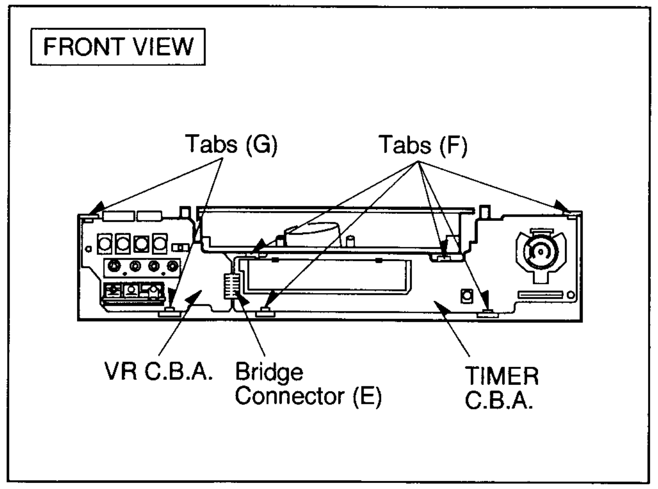

FRONT VIEW
Tabs (G)
Tabs (F)
VR C.B.A.
Bridge
Connector (E)
TIMER
C.B.A.

Fig. D5

5. REMOVAL OF THE POWER SUPPLY UNIT

Disconnect........Bridge connector (H)
Unlock............... 5 Tabs (I)
Unlock............... 2 Tabs (J)

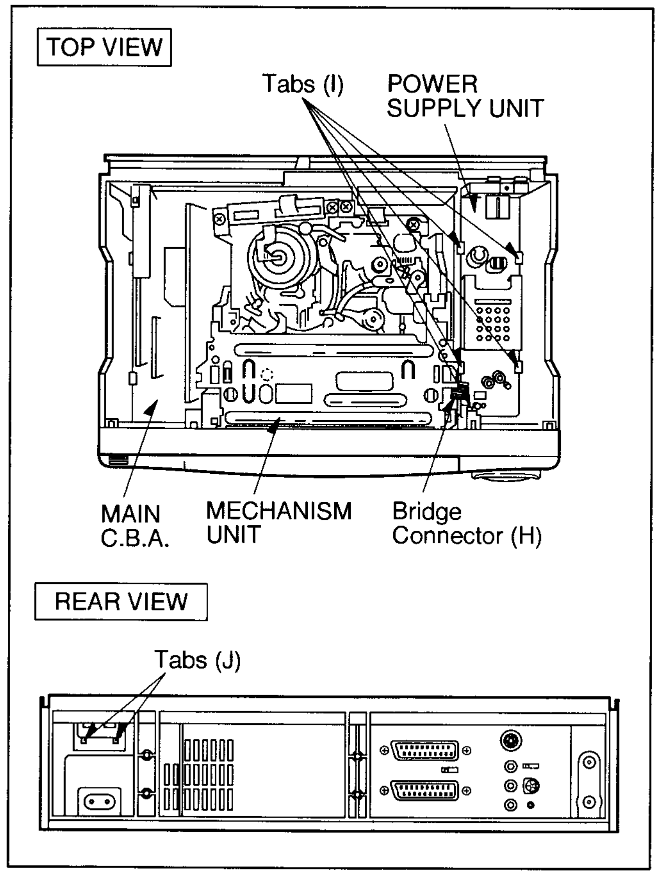

TOP VIEW
Tabs (I)
POWER
SUPPLY UNIT
MAIN
C.B.A.
MECHANISM
UNIT
Bridge
Connector (H)
REAR VIEW
Tabs (J)

Fig. D6

CAUTIONS:
Please pay an attention to disconnect the connector (P1001-P1102) which connected between Main C.B.A. and Power supply unit as shown below.

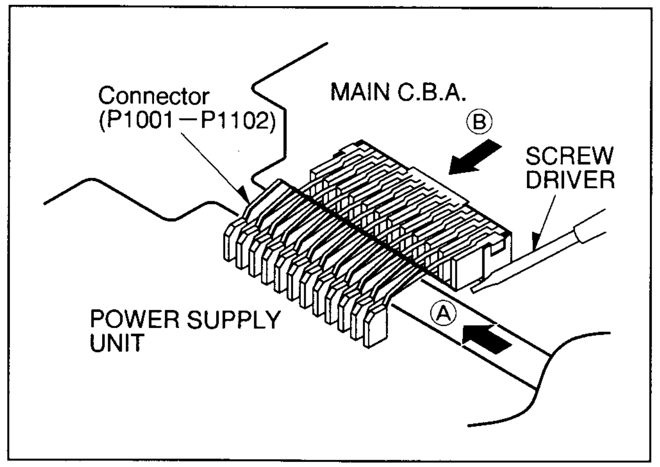

Connector
(P1001—P1102)
MAIN C.B.A.
Ⓑ
SCREW
DRIVER
Ⓐ
POWER SUPPLY
UNIT

Fig. D7

As above drawing, disconnect the connector by SCREW DRIVER from the direction Ⓐ.
Do not disconnect from direction Ⓑ because it is possibility to damage the parts located by the connector.

6. REMOVAL OF THE MECHANISM UNIT

Remove .... 3 Screws (K)
Remove .... Screw (L)

7. REMOVAL OF THE MAIN C.B.A.

Disconnect ... Bridge connector (H) [Fig. D6]
Unlock........... 5 Tabs (M)

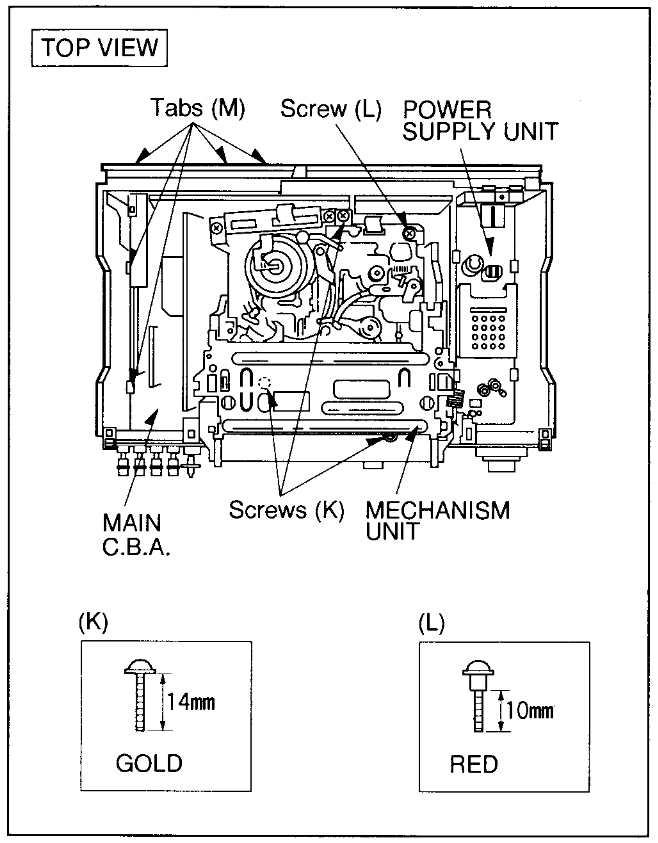

TOP VIEW
Tabs (M)
Screw (L)
POWER
SUPPLY UNIT
MAIN
C.B.A.
Screws (K)
MECHANISM
UNIT
(K)
14mm
GOLD
(L)
10mm
RED

Fig. D8

8. SERVICING POSITION

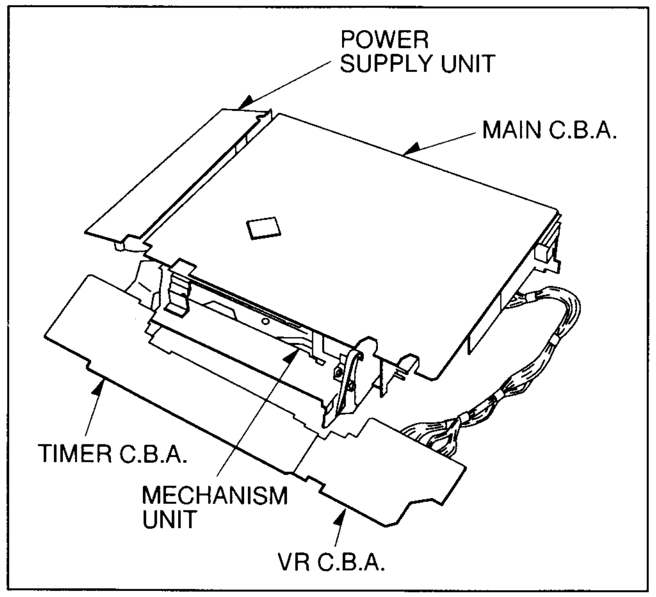

POWER
SUPPLY UNIT
MAIN C.B.A.
TIMER C.B.A.
MECHANISM
UNIT
VR C.B.A.

Fig. D9

2-2. MECHANICAL ADJUSTMENT PROCEDURES

The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

CAUTIONS:

To make a Adjustment Mode for Tape Interchangeability, there are two ways to turn off the Auto Tracking.

(1) Connect a jumper wire between TL SERV and GND as shown Location of Test Points & Controls (Page: 2-4).
(2) Turn the Shuttle Ring to FF then push the EJECT button 3 times to set the Service Mode 2.

2-3. DISASSEMBLY PROCEDURES OF MECHANISM

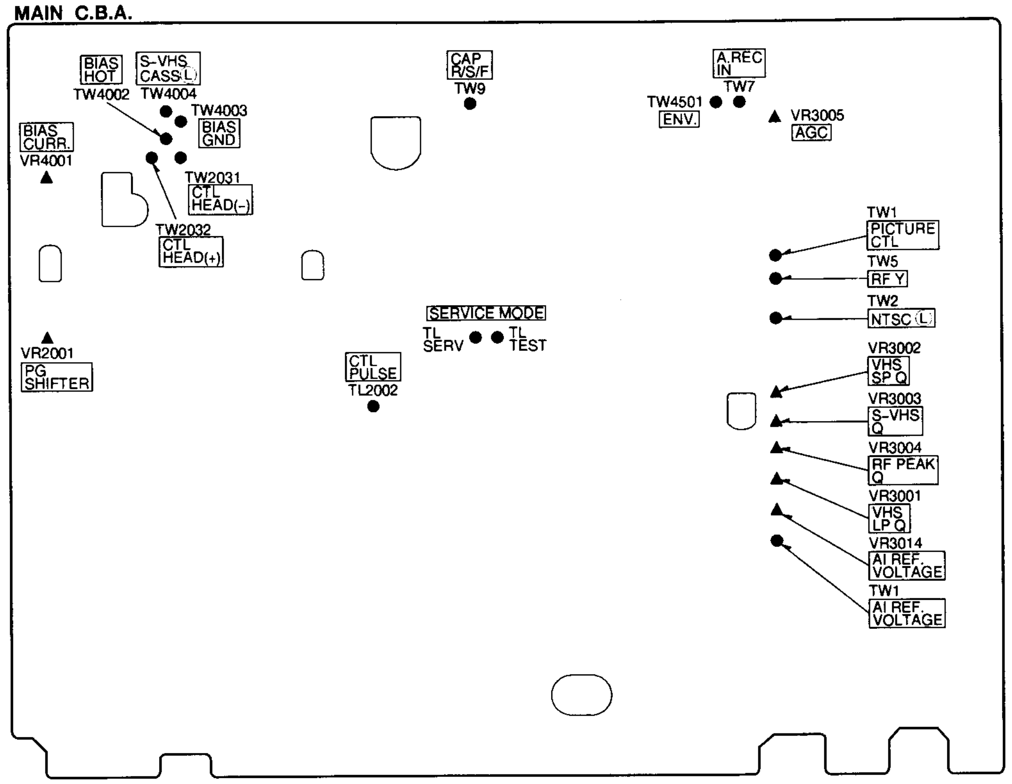
The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

2-4. ASSEMBLY PROCEDURES OF MECHANISM

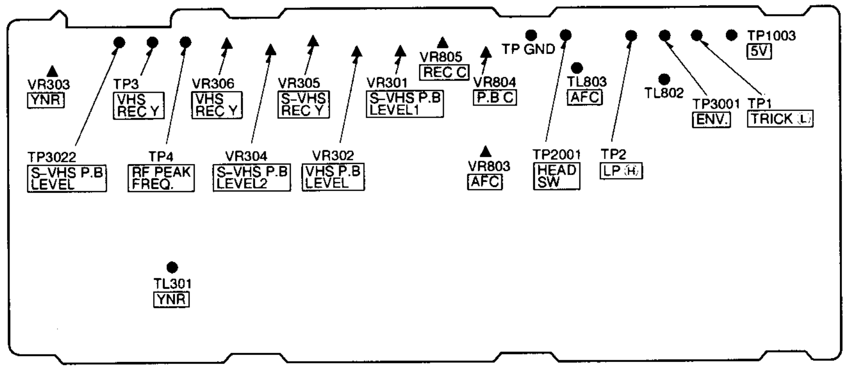
The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

LOCATION OF TEST POINTS & CONTROLS

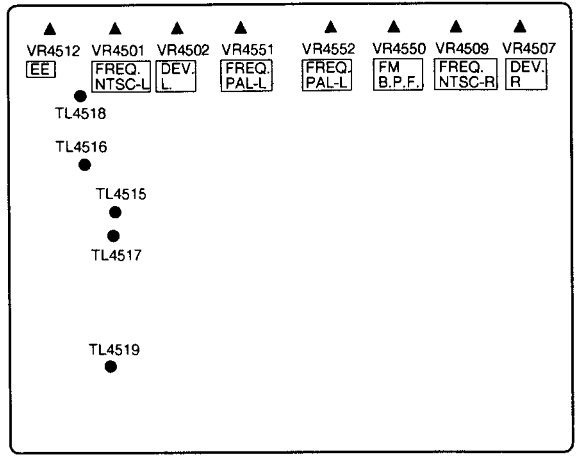
MAIN C.B.A.


BIAS HOT
S-VHS CASS(L)
TW4002
TW4004
TW4003
BIAS GND
BIAS CURR.
VR4001
TW2031
CTL HEAD(-)
TW2032
CTL HEAD(+)
CAP R/S/F
TW9
A.REC IN
TW4501
TW7
ENV.
VR3005
AGC
TW1
PICTURE CTL
TW5
RF Y
TW2
NTSC(L)
SERVICE MODE
TL SERV
TL TEST
VR2001
PG SHIFTER
CTL PULSE
TL2002
VR3002
VHS SP Q
VR3003
S-VHS Q
VR3004
RF PEAK Q
VR3001
VHS LP Q
VR3014
AI REF. VOLTAGE
TW1
AI REF. VOLTAGE

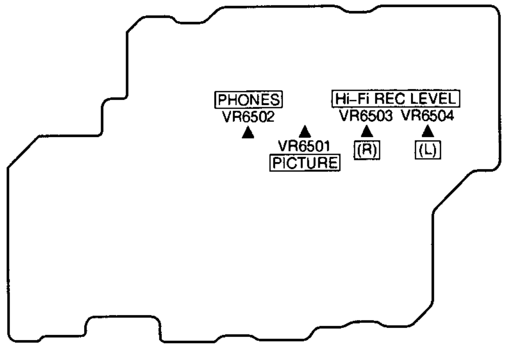
LUMINANCE & CHROMINANCE PACK C.B.A.


VR303
YNR
TP3
VHS REC Y
VR306
VHS REC Y
VR305
S-VHS REC Y
VR301
S-VHS P.B LEVEL1
VR805
REC C
VR804
P.B C
TP GND
TL803
AFC
TL802
TP3001
ENV.
TP1
TRICK (L)
TP1003
5V
TP3022
S-VHS P.B LEVEL
TP4
RF PEAK FREQ.
VR304
S-VHS P.B LEVEL2
VR302
VHS P.B LEVEL
VR803
AFC
TP2001
HEAD SW
TP2
LP (H)
TL301
YNR

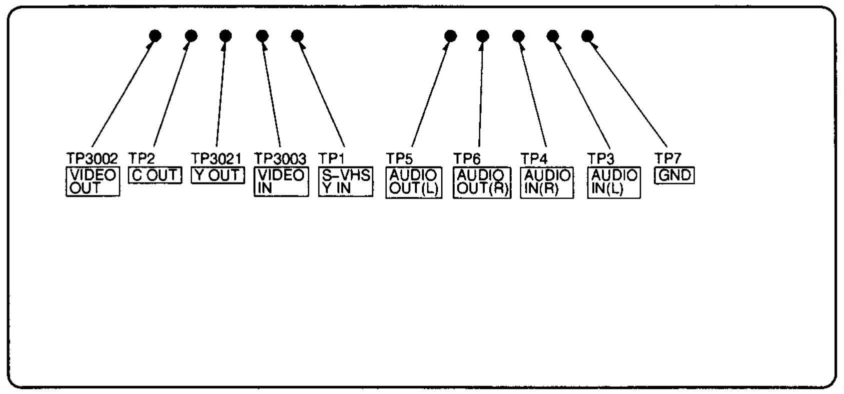
Hi-Fi AUDIO PACK C.B.A.


VR4512
EE
VR4501
FREQ. NTSC-L
VR4502
DEV. L
VR4551
FREQ. PAL-L
VR4552
FREQ. PAL-L
VR4550
FM B.P.F.
VR4509
FREQ. NTSC-R
VR4507
DEV. R
TL4518
TL4516
TL4515
TL4517
TL4519

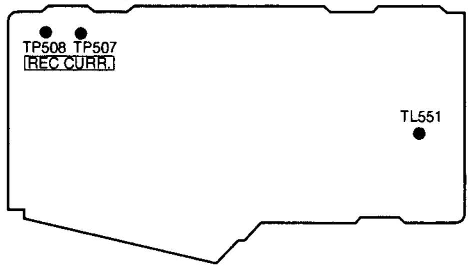
VR C.B.A.


PHONES
VR6502
Hi-Fi REC LEVEL
VR6503
VR6504
VR6501
PICTURE
(R)
(L)

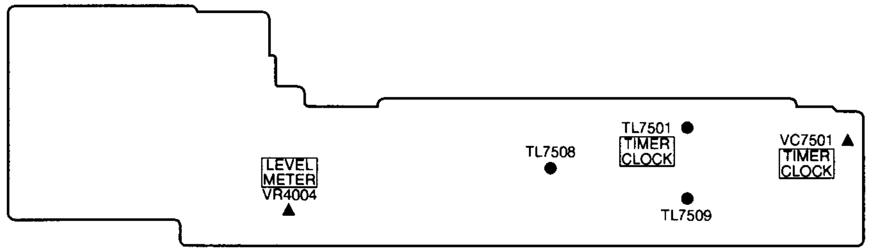
INPUT/OUTPUT PACK C.B.A.


TP3002
VIDEO OUT
TP2
C OUT
TP3021
Y OUT
TP3003
VIDEO IN
TP1
S-VHS Y IN
TP5
AUDIO OUT(L)
TP6
AUDIO OUT(R)
TP4
AUDIO IN(R)
TP3
AUDIO IN(L)
TP7
GND

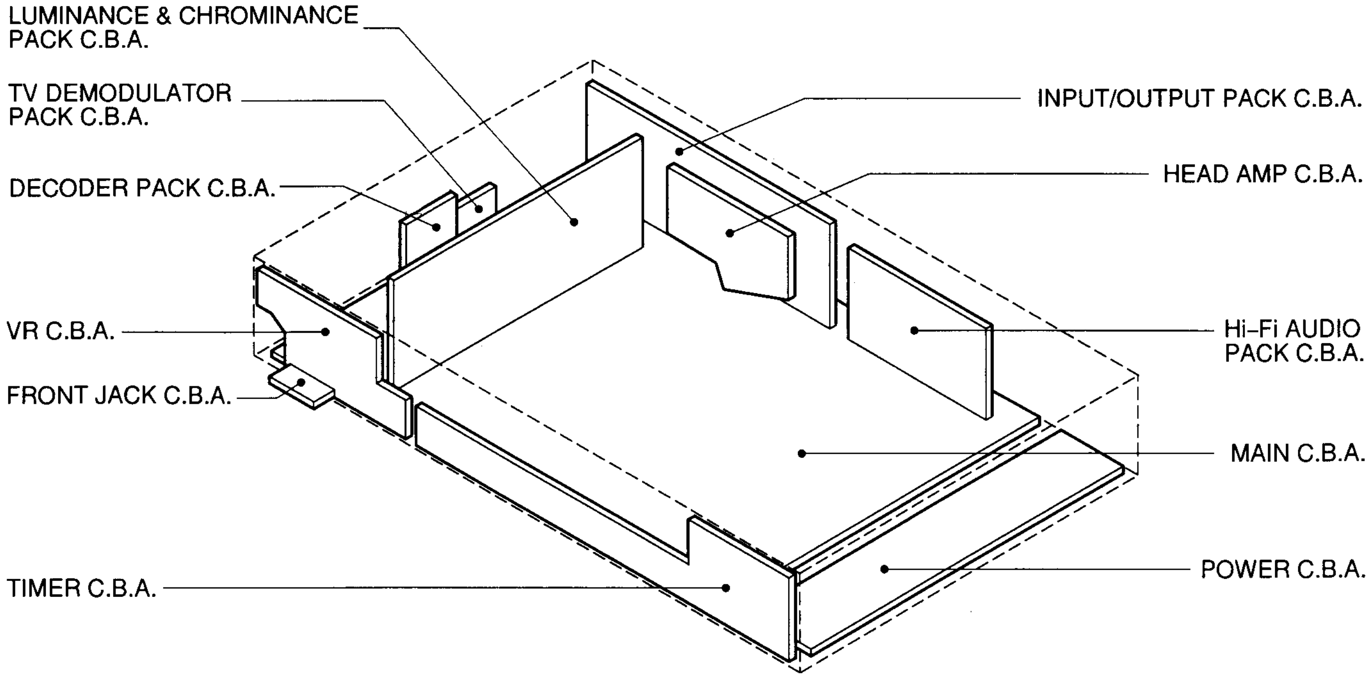
HEAD AMP C.B.A.


TP508
TP507
REC CURR.
TL551

TIMER C.B.A.


LEVEL METER
VR4004
TL7508
TL7501
TIMER CLOCK
TL7509
VC7501
TIMER CLOCK

CIRCUIT BOARD LAYOUT


LUMINANCE & CHROMINANCE PACK C.B.A.
TV DEMODULATOR PACK C.B.A.
DECODER PACK C.B.A.
VR C.B.A.
FRONT JACK C.B.A.
TIMER C.B.A.
INPUT/OUTPUT PACK C.B.A.
HEAD AMP C.B.A.
Hi-Fi AUDIO PACK C.B.A.
MAIN C.B.A.
POWER C.B.A.

2-5. ELECT
PROCE

This section provide
required for electri
Recorders.

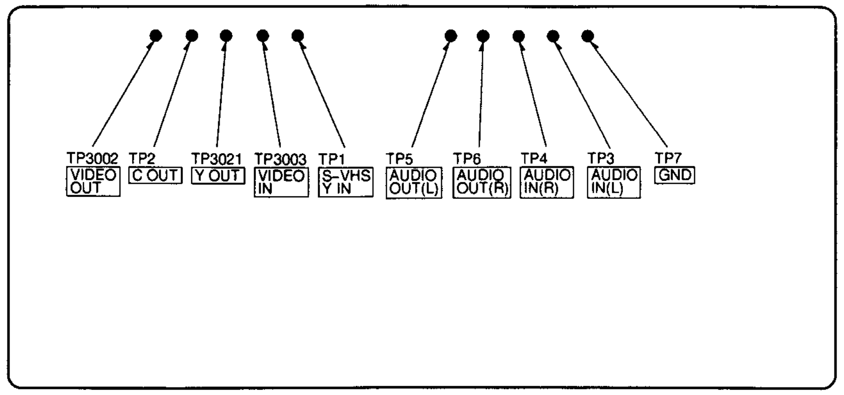
2-5-1. TEST EQUIPM
To perform electrica
required.

1. Dual-Trace Oscill
   Voltage Ran
   Frequency R
   Probes: 10:
2. Frequency Count
   Frequency R
   Probes: 1:1
3. Universal Counte
4. Digital Volt Meter
5. Video Sweep Ge
6. Sine Wave Gene
7. Video Pattern Ge
8. VHS Alignment T
9. VHS Blank Tape.
10. Monitor.
11. Plastic Tip Driver
12. DC Power Suppl

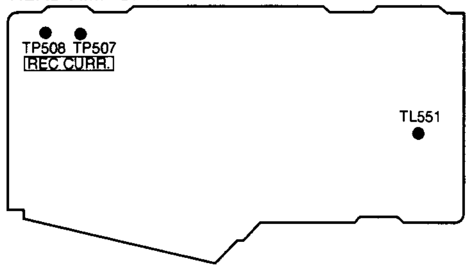
2-5-2. PREPARATIO
During adjustment, s
indication in the proce

AI SW........................
PICTURE VR...........
HIFI REC LEVEL VR
16:9 SW....................
S-VHS SW.................
AV OUT SW..............
TEST SIG. SW..........
CVC SW ....
PHONES LEVEL VR

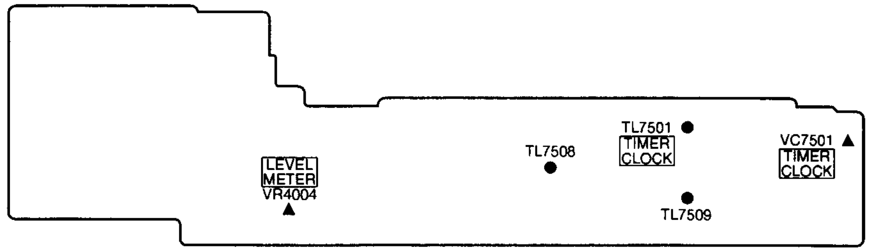
INPUT/OUTPUT PACK C.B.A.

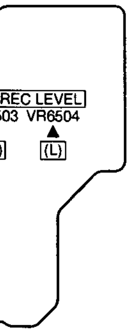

TP3002
VIDEO OUT
TP2
C OUT
TP3021
Y OUT
TP3003
VIDEO IN
TP1
S-VHS Y IN
TP5
AUDIO OUT(L)
TP6
AUDIO OUT(R)
TP4
AUDIO IN(R)
TP3
AUDIO IN(L)
TP7
GND

HEAD AMP C.B.A.

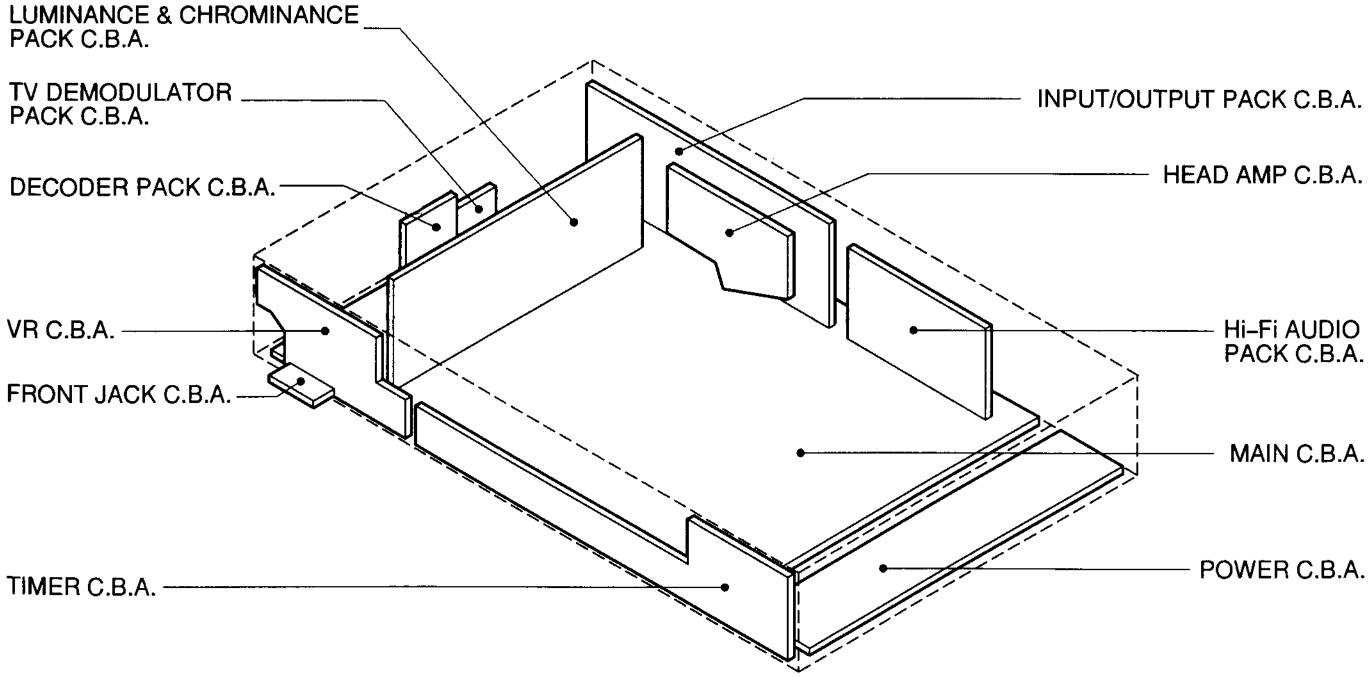

TP506 TP507
REC CURR.
TL551

TIMER C.B.A.


LEVEL METER
VR4004
TL7508
TL7501
TIMER CLOCK
TL7509
VC7501
TIMER CLOCK


REC LEVEL
03 VR6504
(L)

CIRCUIT BOARD LAYOUT


LUMINANCE & CHROMINANCE PACK C.B.A.
TV DEMODULATOR PACK C.B.A.
DECODER PACK C.B.A.
VR C.B.A.
FRONT JACK C.B.A.
TIMER C.B.A.
INPUT/OUTPUT PACK C.B.A.
HEAD AMP C.B.A.
Hi-Fi AUDIO PACK C.B.A.
MAIN C.B.A.
POWER C.B.A.

2-5. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete adjustment procedures required for electric circuits of VHS Video Cassette Recorders.

2-5-1. TEST EQUIPMENT

To perform electrical adjustments following equipment is required.

1. Dual-Trace Oscilloscope. (More than 35 MHz)
   Voltage Range: 0.005-5 V/div
   Frequency Range: DC-35 MHz
   Probes: 10:1 OR 1:1
2. Frequency Counter.
   Frequency Range: 0-10 MHz
   Probes: 1:1
3. Universal Counter.
4. Digital Volt Meter. (D.V.M.)
5. Video Sweep Generator.
6. Sine Wave Generator.
7. Video Pattern Generator.
8. VHS Alignment Tape. (VFJ8125H3F)
9. VHS Blank Tape.
10. Monitor.
11. Plastic Tip Driver.
12. DC Power Supply.

2-5-2. PREPARATION

During adjustment, set each selector as follows: when no indication in the procedure.

AI SW	OFF
PICTURE VR	CENTRE FIX
HIFI REC LEVEL VR	CENTRE FIX
16:9 SW	AUTO
S-VHS SW	ON
AV OUT SW	NORMAL
TEST SIG. SW	OFF
CVC SW	OFF
PHONES LEVEL VR	MAX

2-5-3. HOW TO READ ADJUSTMENT PROCEDURES

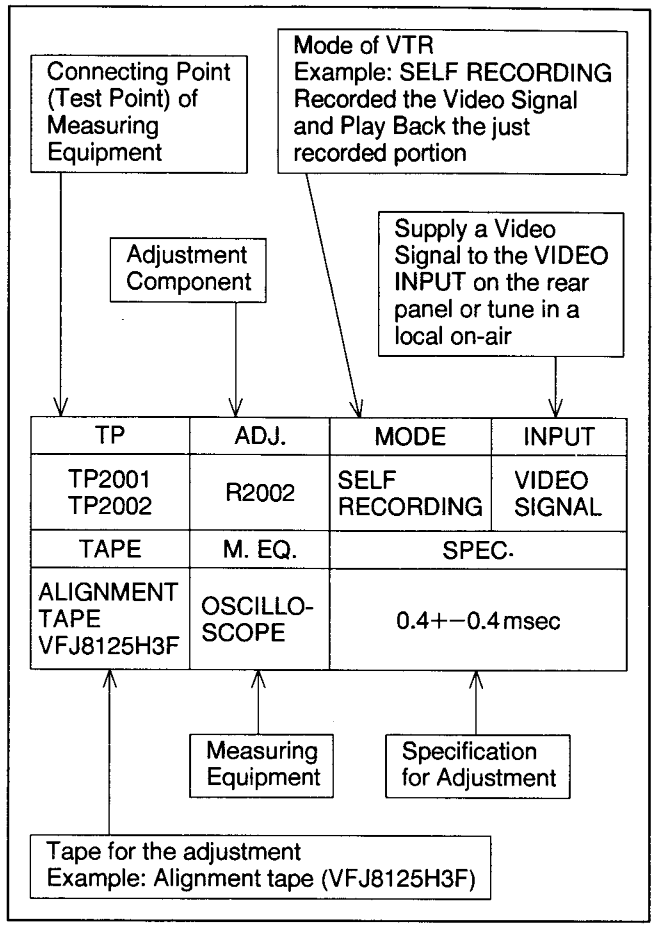

Connecting Point (Test Point) of Measuring Equipment
Mode of VTR
Example: SELF RECORDING Recorded the Video Signal and Play Back the just recorded portion
Adjustment Component
Supply a Video Signal to the VIDEO INPUT on the rear panel or tune in a local on-air
TP
ADJ.
MODE
INPUT
TP2001
TP2002
R2002
SELF RECORDING
VIDEO SIGNAL
TAPE
M. EQ.
SPEC.
ALIGNMENT TAPE VFJ8125H3F
OSCILLO-SCOPE
0.4+−0.4 msec
Measuring Equipment
Specification for Adjustment
Tape for the adjustment
Example: Alignment tape (VFJ8125H3F)

Fig. E1

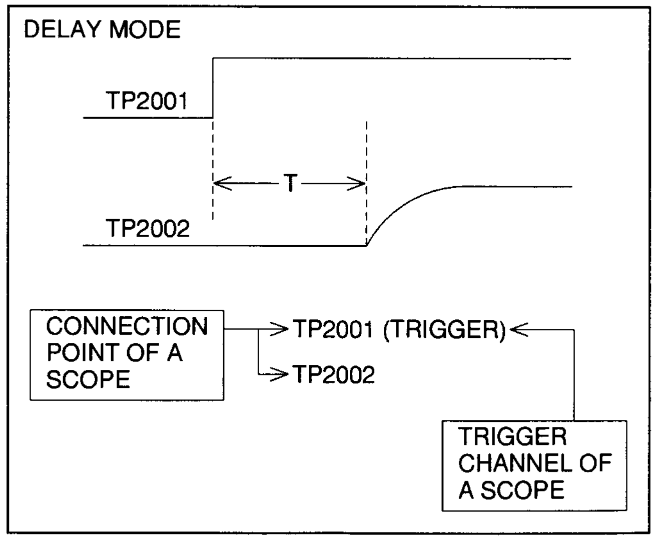

DELAY MODE
TP2001
T
TP2002
CONNECTION POINT OF A SCOPE
TP2001 (TRIGGER)
TP2002
TRIGGER CHANNEL OF A SCOPE

Fig. E2

SERVO SECTION

2-5-4. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP3002	VR2001	PLAYBACK	
TAPE	M. EQ.	SPEC.	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO-SCOPE	7.0+–0.5 (H)	

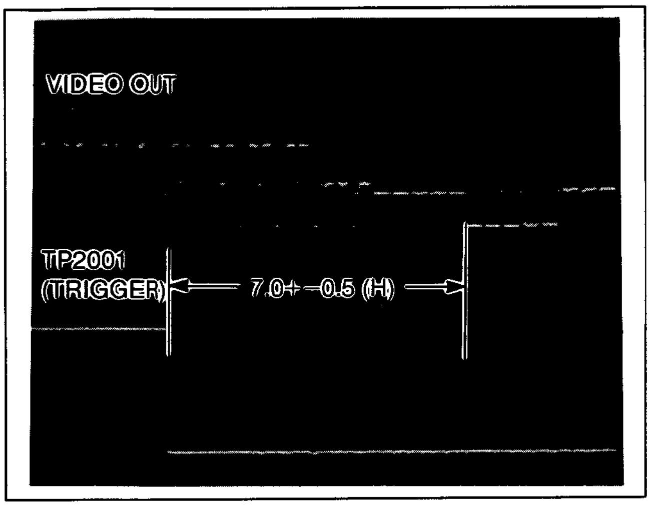


Fig. E3

LUMINANCE & CHROMINANCE SECTION

2-5-5. VIDEO EE LEVEL (AGC) ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR3005	STOP	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
	OSCILLO-SCOPE	2.0+–0.1 (Vp-p)	

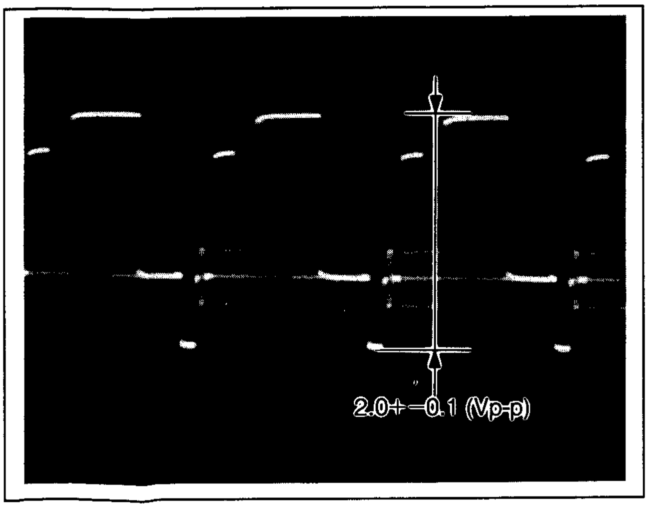


Fig. E4

2-5-6. RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP507 (HOT) TP508 (GND)	VR306 (VHS Y) VR305 (S-VHS Y) VR805 (C)	SP RECORDING	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLO-SCOPE	Y(VHS, S-VHS) : 140+–5 (mVp-p) C: 32+–2 (mVp-p)	

Note:
1. Set the AI SW to OFF position.
2. Set the CVC SW to OFF position.
3. Connect a jumper wire between the pin 96 of IC 6001 and GND (TEST MODE).
4. When adjusting the S-VHS Luminance level, set the S-VHS SW to ON position.
5. When adjusting the VHS Luminance level, set the S-VHS SW to OFF position.
6. Adjust the Luminance level until the peak level of V-SYNC is 140+–5mVp-p (VHS and S-VHS MODE).
7. When adjusting the Chrominance level, Supply +5V DC to TP3 (LUMINANCE & CHROMINANCE PACK) to eliminate Luminance component.
8. Disconnect the jumper wire.

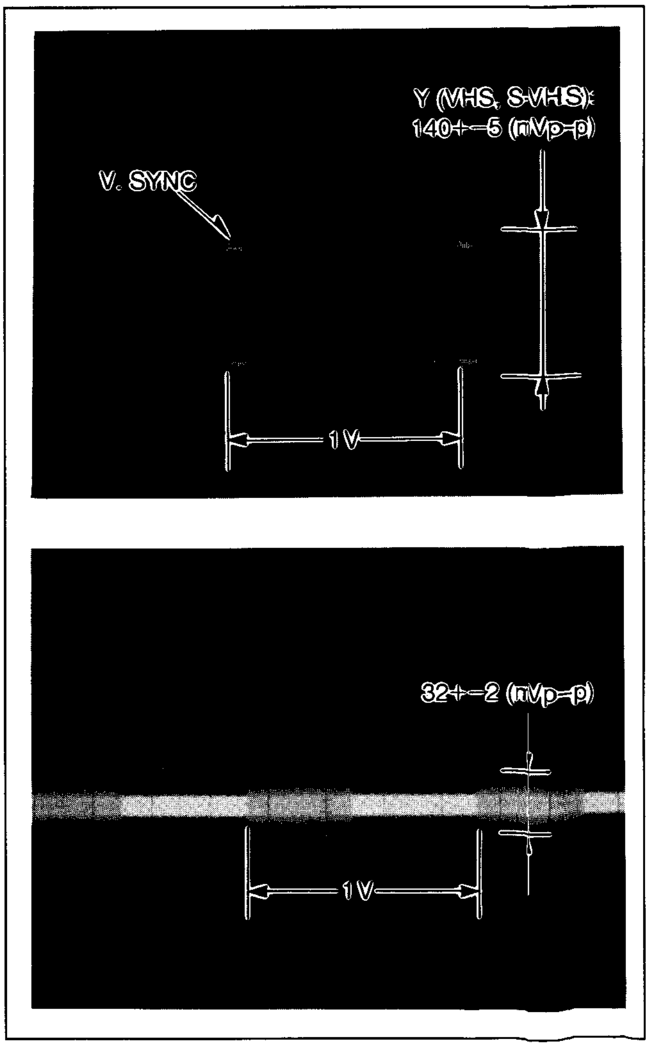


Fig. E5

2-5-7. VHS LUMINANCE PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR302	SP (SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	2.0+−0.2 (Vp-p)	

Note: 1. Set the S-VHS SW to OFF position.
2. Before this adjustment, the RECORDING CURRENT ADJUSTMENT (2-5-6) must be done.

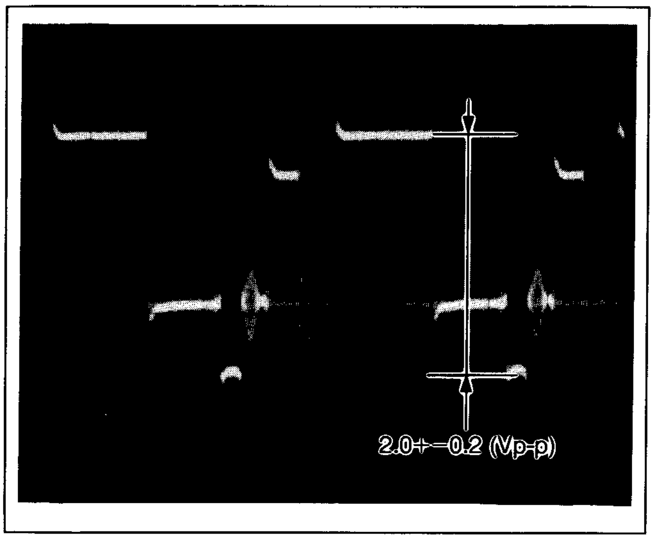


Fig. E6

2-5-8. S-VHS PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3022 (Y1) TP3021 (Y2)	VR301 (Y1) VR304 (Y2)	SP (SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLO-SCOPE	Y1: 0.4+−0.01(Vp-p) Y2: 2.0+−0.01(Vp-p)	

Note: 1. Set the S-VHS SW to ON position.
2. Before this adjustment, VHS PLAYBACK LEVEL ADJUSTMENT and RECORDING CURRENT ADJUSTMENT must be done.

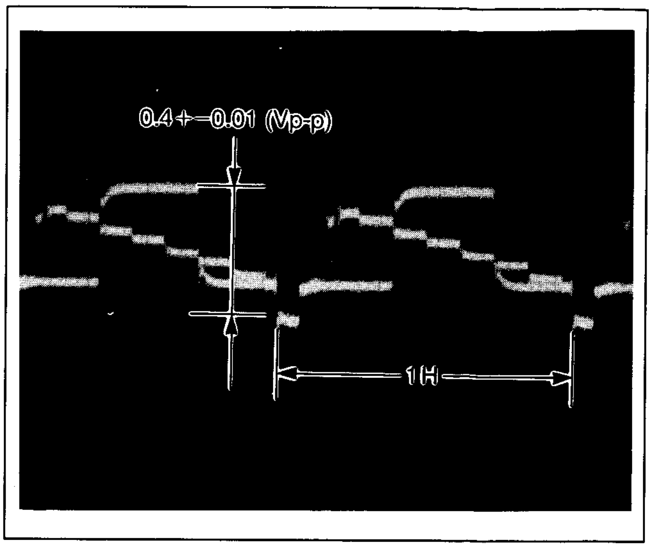


Fig. E7

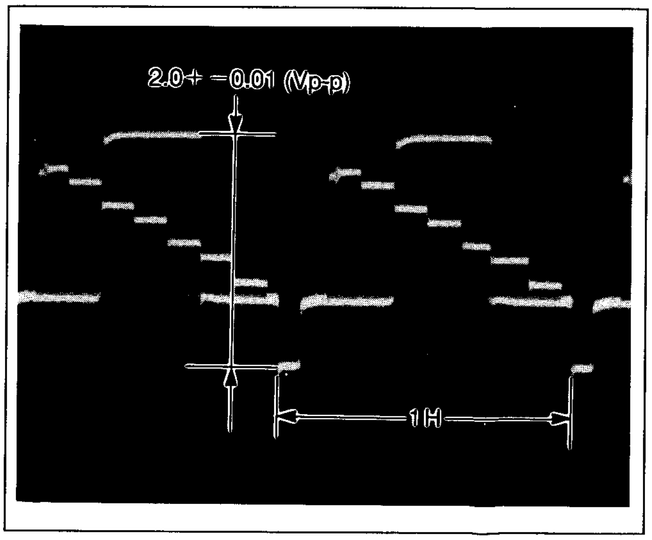


Fig. E8

2-5-9. VHS CHROMINANCE PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR804	SP (SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	1.1+−0.1 (Vp-p)	

Note: 1. Set the S-VHS SW to OFF position.
2. AV1 VIDEO OUT must be 75 Ω terminated.

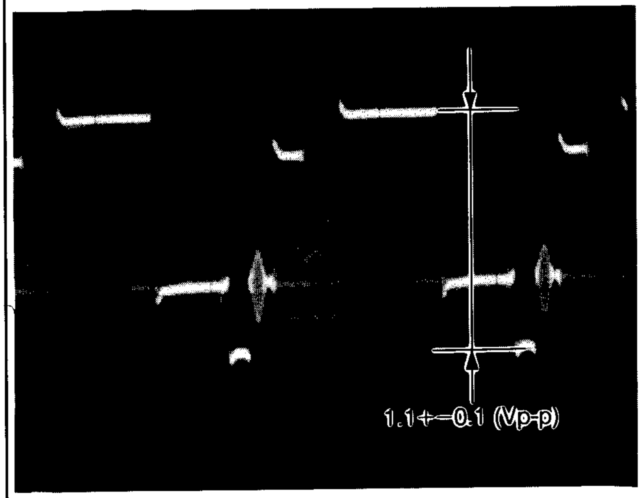
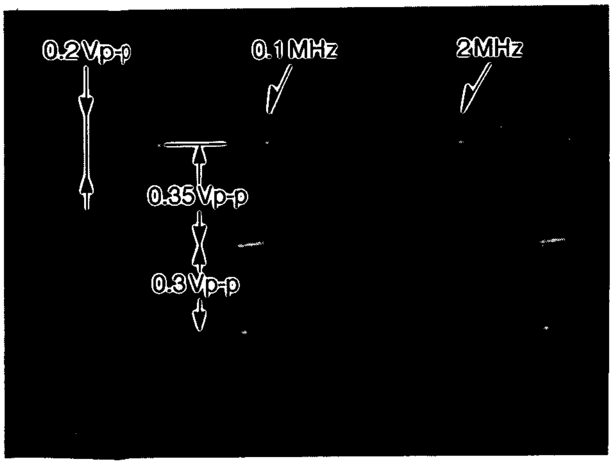


Fig. E9

2-5-10. VHS FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR3002 (SP) VR3001 (LP)	SP/LP (SELF RECORDED) PLAYBACK	VIDEO SWEEP SIGNAL (Shown in Fig. E9)
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SP: 0+-1(dB) (90-110%) LP: 0+-1(dB) (90-110%)	

Note: 1. Set the Video Sweep Signal as shown in Fig. E10.
2. Set the AI and S-VHS SW to OFF position.
3. Set the VIDEO MODE SW to B/W position.



CONDITION: BURST SIGNAL OFF
75 ohm TERMINATED

Fig. E10

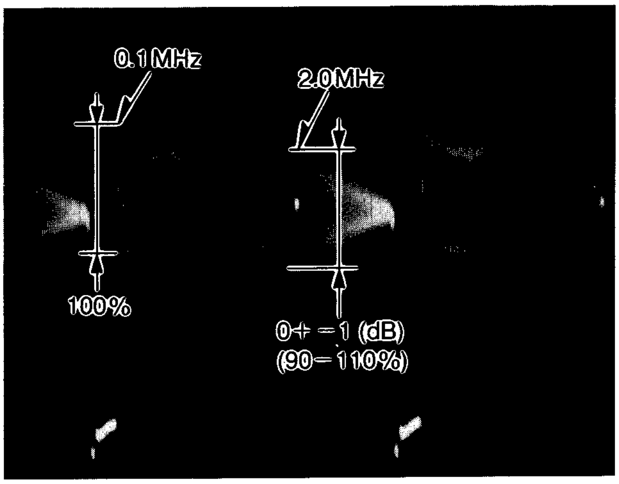
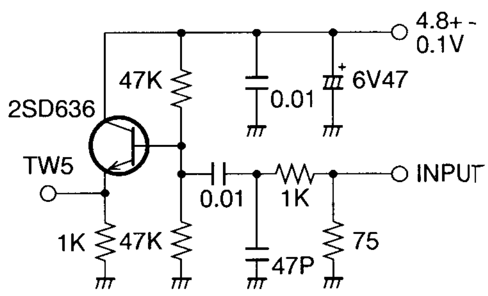


Fig. E11

2-5-11. RF PEAK FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4	VR3004	STOP	VIDEO SWEEP SIGNAL TW5 (RF Y IN)
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SIGNAL LEVEL AT 7MHz PORTION IS MAXIMUM	

Note: 1. Connect the Service Circuit as shown in Fig. E12.
2. Set VR3003 to centre position.
3. Set the Video Sweep Signal Generator (video signal only) as shown in Fig. E13.
4. Supply set up video sweep signal to TW5 via Service Circuit.
5. Adjust VR3004 until the signal level at 7MHz portion is miximum as shown in Fig. E14.



(Example)

75 ohm: ERDS2TJ750	0.01μ: ECCF1H103ZF
1 Kohm: ERDS2TJ102	47P: ECCF1H470JC
47Kohm: ERD2TJ473	6V47μ: ECEA0JK470

Fig. E12

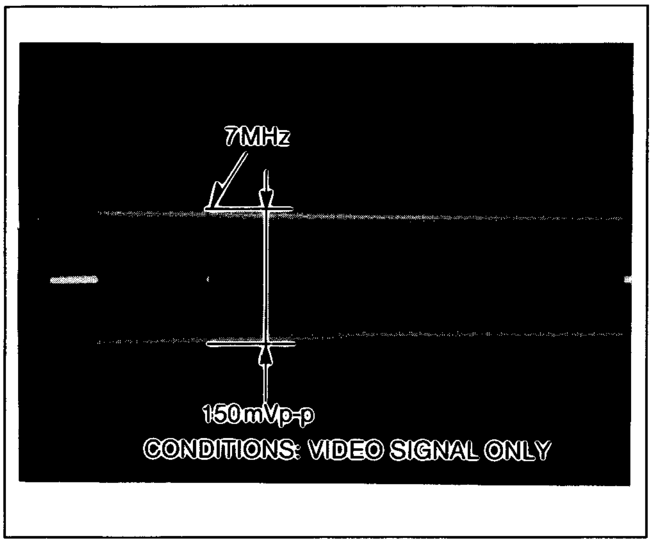


Fig. E13

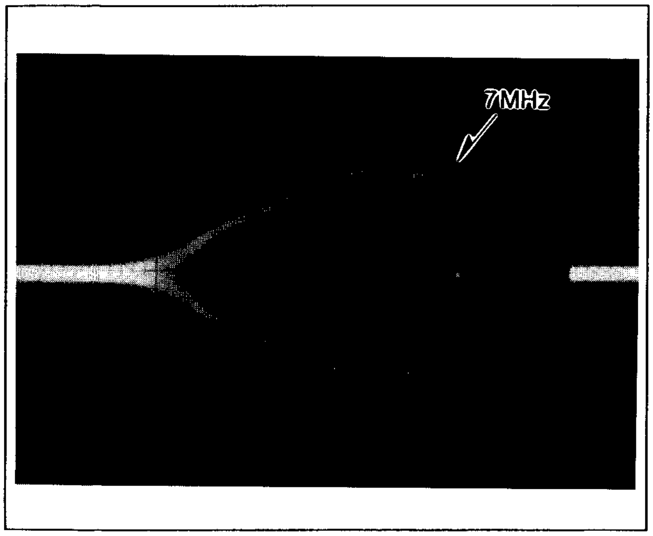
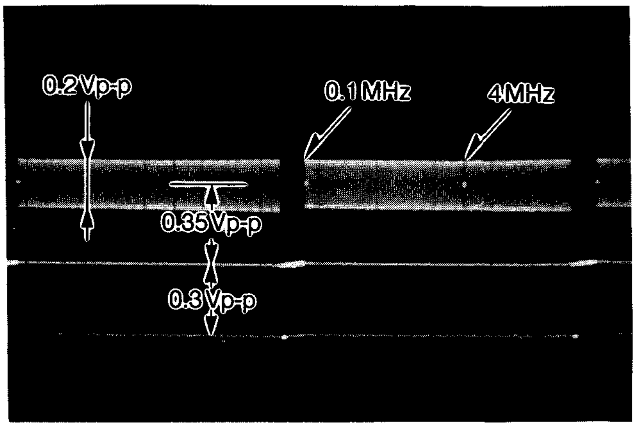


Fig. E14

2-5-12. S-VHS FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3021	VR3003	SP (SELF RECORDED) PLAYBACK	VIDEO SWEEP SIGNAL TP1 (I/O PACK)
TAPE	M. EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SP: −4.5+−1(dB) (55−70%)	

Note: 1. Before this adjustment, RF PEAK ADJUSTMENT must be done.
2. Set the Video Sweep Signal as shown in Fig. E15.
3. Set the AI SW to OFF position.



CONDITION: BURST SIGNAL OFF
75 ohm TERMINATED

Fig. E15

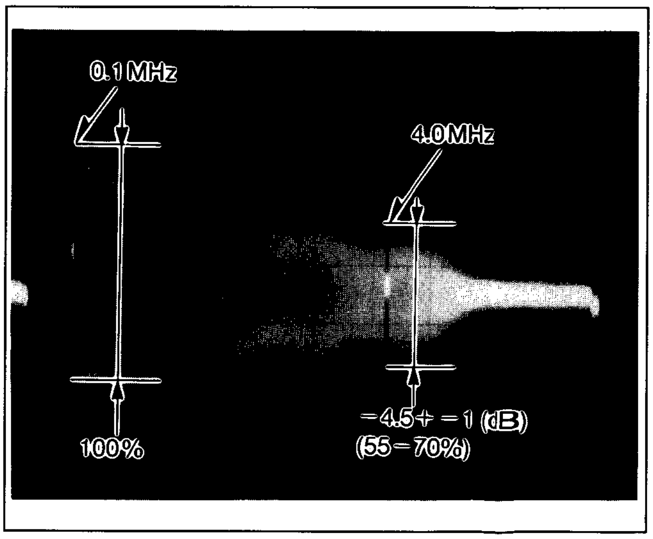


Fig. E16

2-5-13. AI REF. VOLTAGE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TW1	VR3014	SP (SELF RECORDED) PLAYBACK	PAL COLOUR BAR (TP3003)
TAPE	M. EQ.	SPEC.	
BLANK TAPE	D.V.M	2.5+−0.23 (V)	

Note: 1. Set the S-VHS SW to OFF position.
2. Set the CVC SW to ON position.

2-5-14. YNR ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC301-34 (TL301)	VR303	STOP	PAL COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	WAVEFORM IS MINIMUM	

Note: 1. Connect a capacitor (1500pF) between IC301-34 and GND.

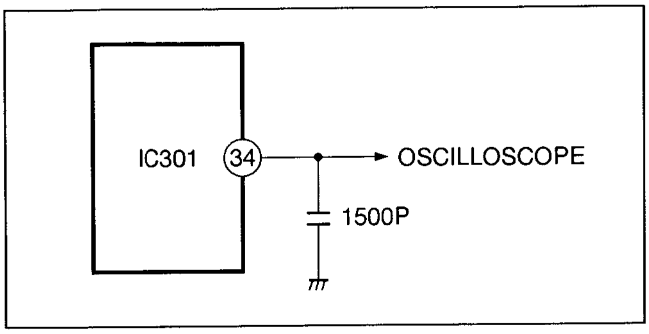


Fig. E17

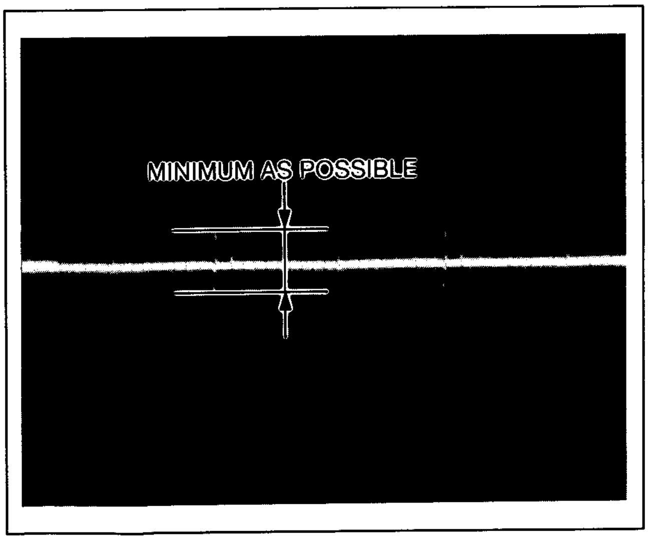


Fig. E18

2-5-15. ARTIFICIAL NTSC FREE RUN ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL803	VR803	STOP	
TAPE	M. EQ.	SPEC.	
	FREQUENCY COUNTER/ SINEWAVE GENERATOR	15735+−100 (Hz)	

Note: 1. Supply +5V DC to TL802.
2. Turn VR803 to maximum frequency, then adjust VR803 until the specification.

AUDIO SECTION

2-5-16. BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4001	RECORDING	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	V.T.V.M.	2.5+−0.1 (mVrms)	

Note: 1. Set the S-VHS SW to OFF position.

2-5-17. HIFI E-E LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT (L)	VR4512	STOP	SINEWAVE 1KHz/−6dB (AUDIO IN (L))
TAPE	M. EQ.	SPEC.	
	V.T.V.M./ SINEWAVE GENERATOR	−8+−0.5 (dB)	

Note: 1. Select the STEREO mode by Remote Controller. (Both Left and Right indicators on the FIP are lit.)
2. Set the HIFI REC VR to FIX position.

2-5-18. CARRIER FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4501-34 (L) IC4501-47 (R)	VR4501 (NTSC-L) VR4509 (NTSC-R) VR4551 (PAL-L) VR4552 (PAL-R)	SP RECORDING	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	FREQUENCY COUNTER	NTSC-L: 1.3+−0.003 (MHz) NTSC-R: 1.7+−0.003 (MHz) PAL-L: 1.4+−0.003 (MHz) PAL-R: 1.8+−0.003 (MHz)	

Note: 1. When adjusting the NTSC mode, connect a jumper wire between TW 2 (on the Main C.B.A.) and GND.
2. When adjusting the PAL mode, disconnect a jumper wire.

2-5-19. DEVIATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
BETWEEN VR4502 and R4511 (L) BETWEEN VR4507 and R4561 (R)	VR4502 (L) VR4507 (R)	SP RECORDING	SINEWAVE 1 KHz/−6 dB (AV1 IN)

TAPE	M. EQ.	SPEC.
BLANK TAPE	V.T.V.M./ SINEWAVE GENERATOR	110 (mVrms)

Note: 1. Before recording the sinewave, adjust the HIFI REC VR until the audio output level of AV1 is 400 mVrms.

2-5-20. FM B.P.F. ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4501-33 (L) IC4501-48 (R)	VR4550	PLAYBACK	SINEWAVE 1.608 MHz/ 400 mVp-p (PS4003-8)

TAPE	M. EQ.	SPEC.
NTSC RECORDED TAPE	V.T.V.M./ SINEWAVE GENERATOR	PAL: Lch (IC4501-33)= Rch (IC4501-48) NTSC: 0+−2.0 (dB)

Note: 1. Disconnect P501 (from MAIN C.B.A. to HEAD AMP PACK C.B.A.).

2. Connect a jumper wire between PS4003-16 and GND to set the PAL mode.
3. The GND lead of oscilloscope must be connected to GND on HIFI AUDIO PACK C.B.A. to reduce the noise.
4. Supply the sinewave signal (1.608 MHz/400 mVp-p) to PS4003-8.
5. Adjust the level of the difference between L CH and R CH is equal.
6. Connect a jumper wire between TL47 (on the Main C.B.A.) and GND to set the NTSC mode.
7. Adjust the level of the difference between L CH and R CH is 0+−2.0 dB.
8. After this adjustment, connect P501 and disconnect the jumper wire.

2-5-21. LEVEL METER SENSITIVITY ADJUSTMENT

TP	ADJ.	MODE	INPUT
LEVEL METER ON THE FIP	VR4004	STOP	SINEWAVE 1 KHz/−6 dB (AUDIO IN (L), (R))

TAPE	M. EQ.	SPEC.
	V.T.V.M./ SINEWAVE GENERATOR	0 dB INDICATOR ON THE AUDIO LEVEL METER JUST LIGHTS UP

Note: 1. Select the STEREO mode.
(Both Left and Right indicators on the FIP are lit.)

2. Before recording the sinewave, adjust the HIFI REC VR until the signal level at Audio Output Terminal is 400 mVrms.

TIMER SECTION

2-5-22. TIMER REFERENCE CLOCK ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL7501	VC7501	STOP	

TAPE	M. EQ.	SPEC.
	UNIVERSAL COUNTER	7812.5+−0.015 (μsec)

3-1. ABBREVIATIONS

443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ
BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (−)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (−)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [−]	CONTROL HEAD (−)
CTL [+]	CONTROL HEAD (+)
CTL [−]	CONTROL HEAD (−)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL
CYL GND	CYLINDER GND
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
D. FM REC [L]	DELAIED FM RECORDING Ⓛ
D. GND	DIGITAL GND

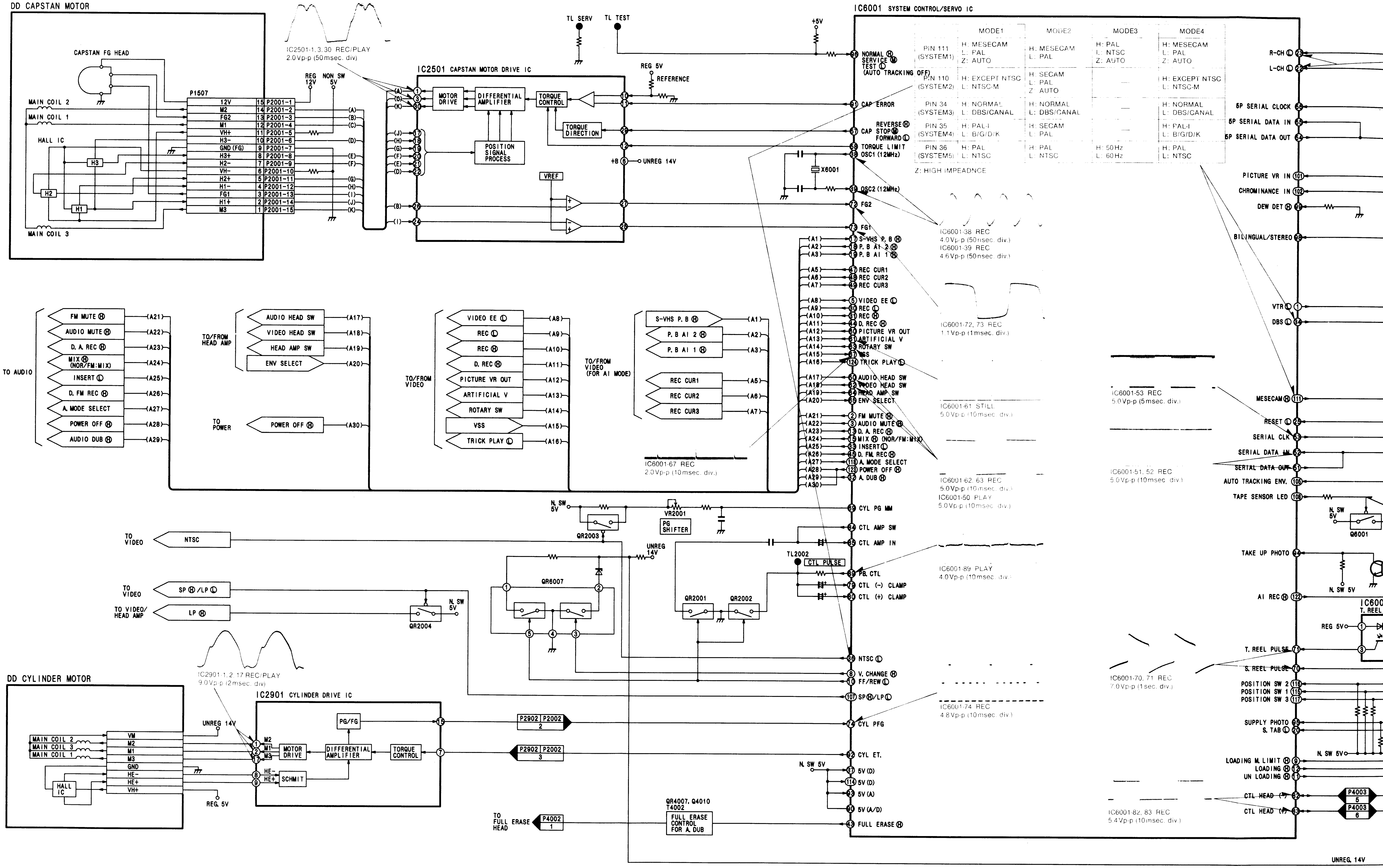
D. REC [H]	DELAYED RECORDING Ⓗ
D4/S. LED	D4/STILL LED
D4/STILLED	D4/STILL LED
DAC [CLK]	TUNER DAC (CLOCK)
DAC/FSCS	TUNER DAC/FS CHIP SELECT
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ
DATA	DATA
DECODER [L]	DECODER (L)
DECODER [R]	DECODER (R)
DEW	DEW
DEW SNS	DEW SENSOR
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ
E. REC 5V	EXCEPT RECORDING 5V
EC	ERROR TORQUE CONTROL
ECR	ERROR TORQUE CONTROL REFERENCE VOLTAGE
EDT TRIG [L]	EDIT TRIGGER Ⓛ
EDIT [H]	EDIT Ⓗ
EE [H]	EE Ⓗ
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ
EE. VV. TR	EE/VV/TRICK PLAY
EJECT. PO	EJECT POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK
ENV. SEL	ENVELOPE SELECT
ENVE. OUT	ENVELOPE OUTPUT
ENVE. SEL	ENVELOPE SELECT
ENV SELECT	ENVELOPE SELECT
EP [H]	LP Ⓗ
EP/LP [H]	LP Ⓗ
EP/LP/SP	LP/SP
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ
EPROMCS	EPROM CHIP SELECT
EX. REC 5V	EXCEPT RECORDING 5V
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ
FG1 IN	FG1 PULSE INPUT
FG2 IN	FG2 PULSE INPUT
FILTER ADJUSTMEN	FILTER ADJUSTMENT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ
FLY ON [H]	FLYING ERASE E HEAD ON Ⓗ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ
FM MUT [H]	FM AUDIO MUTE Ⓗ
FM MUTE [H]	FM AUDIO MUTE Ⓗ
FM OUT [L]	FM OUTPUT (L)
FM OUT [R]	FM OUTPUT (R)
FM PACK OUT [L]	FM PACK OUTPUT (L)
FM PACK OUT [R]	FM PACK OUTPUT (R)
FM/BS SEL [L]	FM/BS SELECT (L)
FM/BS SEL [R]	FM/BS SELECT (R)
FS. CLK	FS CLOCK
FUL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E[H]	FULL ERASE HEAD ON Ⓗ
FULL. E. 12V	FULL ERASE 12V
GND [A]	GND (ANALOGUE)
GND [TU]	GND (TUNER)
GND/N. SW. 12V	GND/NON SW 12V

H. SYNC	HORIZONTAL SYNC
H. AMP. SW	HEAD AMP SW PULSE
H. P <R>	HEAD PHONE (R)
H. P <L>	HEAD PHONE (L)
H. P GND	HEAD PHONE GND
H. P OUT [L]	HEAD PHONE OUTPUT (L)
H. P OUT [R]	HEAD PHONE OUTPUT (R)
H. SW	HEAD SW PULSE
HEAD PHONE [L]	HEAD PHONE (L)
HEAD PHONE [R]	HEAD PHONE (R)
HEAD SW	HEAD SW
HEATER [+]	HEATER (+)
HEATER [−]	HEATER (−)
HSS	HORIZONTAL SYNC SIGNAL
HTR [+]	HEATER (+)
HTR [−]	HEATER (−)
I RFE	REFERENCE CURRENT
ICL	CONTROL AGC CIRCUIT
IF	INTERMEDIATE FREQUENCY
IN SELA1	INPUT SELECT A1 POSITION
IN SELA2	INPUT SELECT A2 POSITION
IN SELA3	INPUT SELECT A3 POSITION
INS L/R [L]	INSERT Lch/Rch Ⓛ
INS. [H]	INSERT Ⓗ
INSEL A1	INPUT SELECT A1 POSITION
INSEL A2	INPUT SELECT A2 POSITION
INSERT	INSERT
INSERT [H]	INSERT Ⓗ
IO CS	INPUT/OUTPUT CHIP SELECT
JOG1	JOG1
JOG S3 LED/FOWRD	JOG LED/FORWARD LED
JOG/F. LED	JOG LED/FORWARD LED
JSB [H]	JSB Ⓗ
JST. CLCK	JUST CLOCK
JST. CLK	JUST CLOCK
JST. CLOCK	JUST CLOCK
L. OUT	Lch OUTPUT
L. CH [H]	Lch Ⓗ
L. CH [L]	Lch Ⓛ
LED (MAIN)	LED (MAIN)
LED (STEREO)	LED (STEREO)
LED (SUB)	LED (SUB)
LED CKL	LED SERIAL CLOCK
LED CKS	LED SERIAL CLOCK
LED DATA	LED SERIAL DATA
LINE IN 1 [L]	LINE INPUT 1 (L)
LINE IN 1 [R]	LINE INPUT 1 (R)
LINE IN 2 [L]	LINE INPUT 2 (L)
LINE IN 2 [R]	LINE INPUT 2 (R)
LINE IN V	LINE INPUT VIDEO
LINE IN [L]	LINE INPUT (L)
LINE IN [R]	LINE INPUT (R)
LINE OUT [L]	LINE OUTPUT (L)
LINE OUT [R]	LINE OUTPUT (R)
LP [H]	LP Ⓗ

LPTRI [L]	LP TRICK PLAY Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING
M GND	MOTOR GND
M REG	MOTOR REGULATOR
MAIN OUT	MAIN OUTPUT
MAIN [L]	MAIN Ⓛ
MAIN/MONO	MAIN/MONAURAL
MAX IN	MAXIMAM INPUT
MES [H]	MESECAM Ⓗ
MESE [H]	MESECAM Ⓗ
MESE [L]	MESECAM Ⓛ
METER 5V	LEVEL METER 5V
METER [L]	LEVEL METER (L)
METER [R]	LEVEL METER (R)
METER. L/AVS	LEVEL METER (L)
METER. R/AVC	LEVEL METER (R)
MI/BI [L]	MIX Ⓗ/BILIGUAL
MIC GND	MIC GND
MIC IN	MIC INPUT
MIC IN [L]	MIC INPUT (L)
MIC IN [R]	MIC INPUT (R)
MIC [H]	MIC Ⓗ
MIX [H]	MIX Ⓗ
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ
MODE SEL	AUDIO MODE SELECT
MODE SW	AUDIO MODE SW
MODE. S. IN	AUDIO MODE SELECT INPUT
MODE. S. OUT	AUDIO MODE SELECT OUTPUT
MONO [H]	MONAURAL Ⓗ
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ
MONO2 [L]	MONAURAL 2
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)
MOTOR GND	MOTOR GND
MUTE	MUTE
N. A. REC [L]	NORMAL AUDIO RECORDING
N. SW 12V	NON SW 12V
N. SW. 5. DET	NON SW 5V DETECT
NICAM	NICAM
NICAM [L]	NICAM Ⓛ
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ
NORMAL [H]	NORMAL Ⓗ
NR BIAS	NR BIAS
NTSC [L]	NTSC Ⓛ
OCH	CONTROL AGC CIRCUIT
OUT	OUTPUT
P-OFF [H]	POWER OFF Ⓗ
P-OFF [L]	POWER OFF Ⓛ
P. FAIL	POWER FAILURE DETECT
P. OFF [H]	POWER OFF Ⓗ
P. OFF [L]	POWER OFF Ⓛ
PAL [H]	PAL Ⓗ
PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
PB ADJ OUT	PLAYBACK ADJUST OUTPUT
PB OUT	PLAYBACK OUTPUT
PB. H	PLAYBACK Ⓗ
PFG	PG/FG
PHOTSN +B	PHOTO SENSOR +B
PICT. CNT	PICTURE CONTROL
PLAY LED/RVS LED	PLAY LED/REVERSE LED
PLAY. PO	PLAY POSITION
PLAY/R. LED	PLAY LED/REVERSE LED
PLY/DEW	PLAY/DEW Ⓗ
POWER OFF [L]	POWER OFF Ⓛ
PREROLL [H]	PREROLL Ⓗ
PWRFAIL	POWER FAILURE DETECT
R. CH [H]	Rch Ⓗ
R. CH [L]	Rch Ⓛ
R. ST	RESET
R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
RCH [H]	Rch Ⓗ
REC 12V	RECORDING 12V
REC CHROMA	RECORDING CHROMINANCE SIGNAL
REC H	RECORDING Ⓗ
REC IN	RECORDING INPUT
REC OUT [L]	RECORDING OUTPUT Ⓛ
REC START	RECORDING START
REC VR [C]	RECORDING VOLUME (COMMON)
REC VR [L]	RECORDING VOLUME (L)
REC VR [R]	RECORDING VOLUME (R)
REC Y	RECORDING LUMINANCE SIGNAL
REC [H]	RECORDING Ⓗ
REC. C	RECORDING CHROMINANCE SIGNAL
REC. Y	RECORDING LUMINANCE SIGNAL
REC/EE CTL	RECORDING/EE CONTROL
REEL-T	REEL PULSE (TAKE-UP)
REEL-S	REEL PULSE (SUPPLY)
REGULATOR FILTER	REGULATOR FILTER
RESET	RESET
REV M F/R	REVIEW MOTOR FORWARD/REVERSE
REV M V1	REVIEW MOTOR V1
REV M V2	REVIEW MOTOR V2
REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
REV MOTOR V1	REVIEW MOROR V1
REV MOTOR V2	REVIEW MOTOR V2
REV MOTOR [+]	REVIEW MOTOR (+)
REV MOTOR [−]	REVIEW MOTOR (−)
REV. M. GND	REVIEW MOTOR GND
RF. CHROMA	RF CHROMINANCE SIGNAL
RF OUT	RF OUTPUT
RF Y	RF LUMINANCE SIGNAL
RF. Y. IN	RF LUMINANCE SIGNAL INPUT
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT

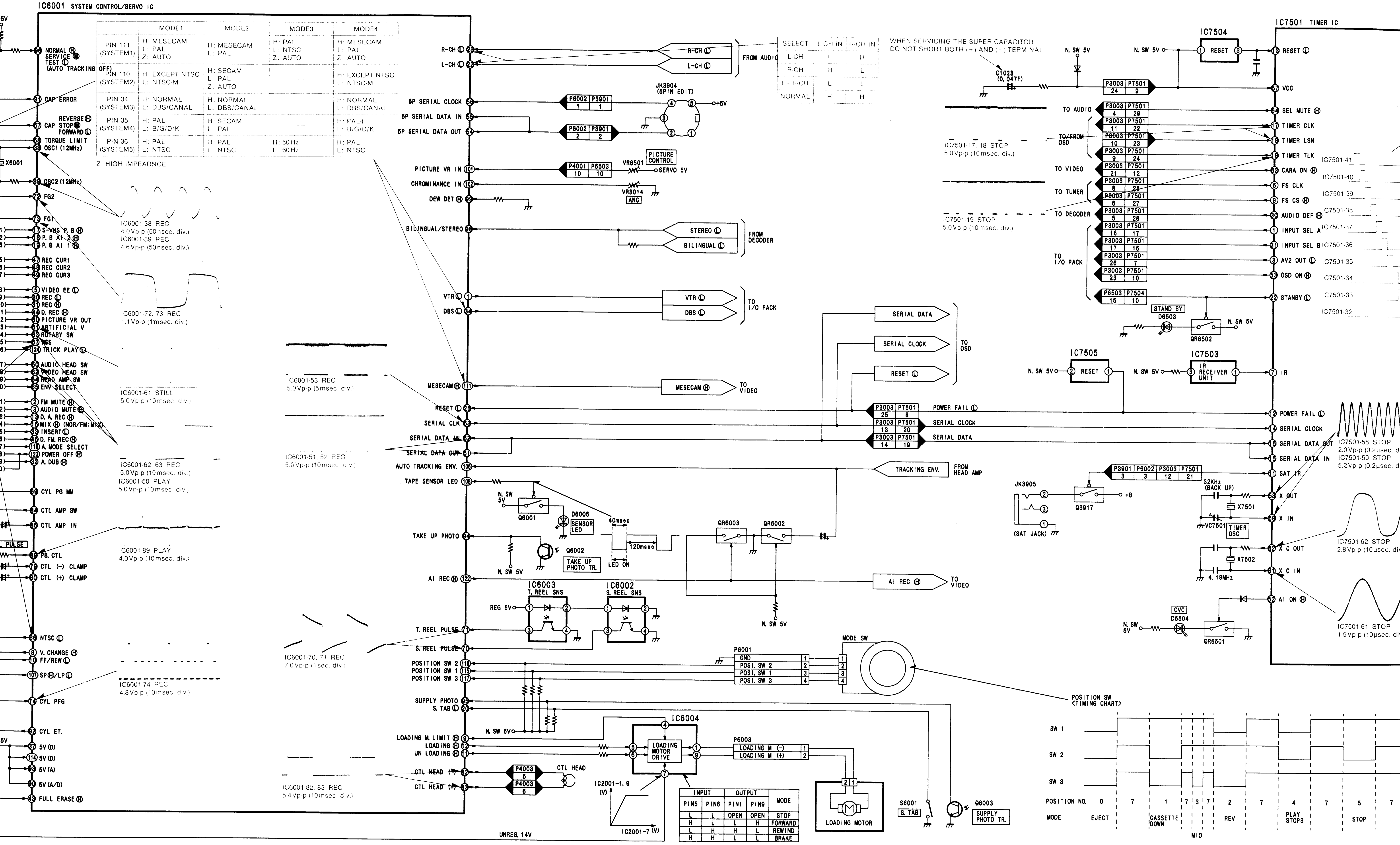
ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [−]	SOLENOID (−)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	RERERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

3-2. SYSTEM CONTROL & SERVO BLOCK DIAGRAM


DD CAPSTAN MOTOR
CAPSTAN FG HEAD
MAIN COIL 2
MAIN COIL 1
HALL IC
H1
H2
H3
MAIN COIL 3
P1507
12V
M2
FG2
M1
VH+
H3-
GND (FG)
H3+
H2-
VH-
H2+
H1-
FG1
H1+
M3
P2001-1
P2001-2
P2001-3
P2001-4
P2001-5
P2001-6
P2001-7
P2001-8
P2001-9
P2001-10
P2001-11
P2001-12
P2001-13
P2001-14
P2001-15
IC2501-1, 3, 30 REC/PLAY
2.0Vp-p (50msec. div)
REG 12V
NON SW 5V
IC2501 CAPSTAN MOTOR DRIVE IC
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE CONTROL
TORQUE DIRECTION
POSITION SIGNAL PROCESS
VREF
+B
UNREG 14V
REG 5V
REFERENCE
TL SERV
TL TEST
+5V
IC6001 SYSTEM CONTROL/SERVO IC
NORMAL Ⓗ
SERVICE Ⓜ
TEST Ⓛ
(AUTO TRACKING OFF)
CAP ERROR
REVERSE Ⓗ
CAP STOP Ⓜ
FORWARD Ⓛ
TORQUE LIMIT
OSC1 (12MHz)
X6001
OSC2 (12MHz)
FG2
FG1
S-VHS P. B Ⓗ
P. B AI 2 Ⓗ
P. B AI 1 Ⓗ
REC CUR1
REC CUR2
REC CUR3
VIDEO EE Ⓛ
REC Ⓛ
REC Ⓗ
D. REC Ⓗ
PICTURE VR OUT
ARTIFICIAL V
ROTARY SW
VSS
TRICK PLAY Ⓛ
AUDIO HEAD SW
VIDEO HEAD SW
HEAD AMP SW
ENV SELECT
FM MUTE Ⓗ
AUDIO MUTE Ⓗ
D. A. REC Ⓗ
MIX Ⓗ (NOR/FM:MIX)
INSERT Ⓛ
D. FM. REC Ⓗ
A. MODE SELECT
POWER OFF Ⓗ
A. DUB Ⓗ
CYL PG MM
CTL AMP SW
CTL AMP IN
PB. CTL
CTL (-) CLAMP
CTL (+) CLAMP
NTSC Ⓛ
V. CHANGE Ⓗ
FF/REW Ⓛ
SP Ⓗ/LP Ⓛ
CYL PFG
CYL ET.
5V (D)
5V (D)
5V (A)
5V (A/D)
FULL ERASE Ⓗ
IC6001-38 REC
4.0Vp-p (50nsec. div.)
IC6001-39 REC
4.6Vp-p (50nsec. div.)
IC6001-72, 73 REC
1.1Vp-p (1msec. div.)
IC6001-61 STILL
5.0Vp-p (10msec. div.)
IC6001-53 REC
5.0Vp-p (5msec. div.)
IC6001-62, 63 REC
5.0Vp-p (10msec. div.)
IC6001-50 PLAY
5.0Vp-p (10msec. div.)
IC6001-51, 52 REC
5.0Vp-p (10msec. div.)
IC6001-67 REC
2.0Vp-p (10msec. div.)
IC6001-89 PLAY
4.0Vp-p (10msec. div.)
IC6001-74 REC
4.8Vp-p (10msec. div.)
IC6001-70, 71 REC
7.0Vp-p (1sec. div.)
IC6001-82, 83 REC
5.4Vp-p (10msec. div.)
R-CH Ⓛ
L-CH Ⓛ
5P SERIAL CLOCK
5P SERIAL DATA IN
5P SERIAL DATA OUT
PICTURE VR IN
CHROMINANCE IN
DEW DET Ⓗ
BILINGUAL/STEREO
VTR Ⓛ
DBS Ⓛ
MESECAM Ⓗ
RESET Ⓛ
SERIAL CLK
SERIAL DATA IN
SERIAL DATA OUT
AUTO TRACKING ENV.
TAPE SENSOR LED
N. SW 5V
Q6001
TAKE UP PHOTO
AI REC Ⓗ
IC600
T. REEL
REG 5V
T. REEL PULSE
S. REEL PULSE
POSITION SW 2
POSITION SW 1
POSITION SW 3
SUPPLY PHOTO
S. TAB Ⓛ
LOADING M. LIMIT Ⓗ
LOADING Ⓗ
UN LOADING Ⓗ
CTL HEAD (+)
CTL HEAD (-)
P4003 5
P4003 6
UNREG 14V
TO AUDIO
FM MUTE Ⓗ
AUDIO MUTE Ⓗ
D. A. REC Ⓗ
MIX Ⓗ (NOR/FM:MIX)
INSERT Ⓛ
D. FM REC Ⓗ
A. MODE SELECT
POWER OFF Ⓗ
AUDIO DUB Ⓗ
TO/FROM HEAD AMP
AUDIO HEAD SW
VIDEO HEAD SW
HEAD AMP SW
ENV SELECT
TO POWER
POWER OFF Ⓗ
TO/FROM VIDEO
VIDEO EE Ⓛ
REC Ⓛ
REC Ⓗ
D. REC Ⓗ
PICTURE VR OUT
ARTIFICIAL V
ROTARY SW
VSS
TRICK PLAY Ⓛ
TO/FROM VIDEO (FOR AI MODE)
S-VHS P. B Ⓗ
P. B AI 2 Ⓗ
P. B AI 1 Ⓗ
REC CUR1
REC CUR2
REC CUR3
N. SW 5V
VR2001
PG SHIFTER
QR2003
TO VIDEO
NTSC
UNREG 14V
QR6007
TL2002
CTL PULSE
QR2001
QR2002
TO VIDEO
SP Ⓗ/LP Ⓛ
TO VIDEO/HEAD AMP
LP Ⓗ
QR2004
IC2901-1, 2, 17 REC/PLAY
9.0Vp-p (2msec. div)
DD CYLINDER MOTOR
MAIN COIL 2
MAIN COIL 3
MAIN COIL 1
HALL IC
VM
M2
M1
M3
GND
HE-
HE+
VH+
UNREG 14V
REG. 5V
IC2901 CYLINDER DRIVE IC
MOTOR DRIVE
SCHMIT
PG/FG
DIFFERENTIAL AMPLIFIER
TORQUE CONTROL
P2902 P2002 2
P2902 P2002 3
TO FULL ERASE HEAD
P4002 1
QR4007, Q4010
T4002
FULL ERASE CONTROL FOR A. DUB

	MODE1	MODE2	MODE3	MODE4
PIN 111 (SYSTEM1)	H: MESECAM L: PAL Z: AUTO	H: MESECAM L: PAL	H: PAL L: NTSC Z: AUTO	H: MESECAM L: PAL Z: AUTO
PIN 110 (SYSTEM2)	H: EXCEPT NTSC L: NTSC-M	H: SECAM L: PAL Z: AUTO	—	H: EXCEPT NTSC L: NTSC-M
PIN 34 (SYSTEM3)	H: NORMAL L: DBS/CANAL	H: NORMAL L: DBS/CANAL	—	H: NORMAL L: DBS/CANAL
PIN 35 (SYSTEM4)	H: PAL-I L: B/G/D/K	H: SECAM L: PAL	—	H: PAL-I L: B/G/D/K
PIN 36 (SYSTEM5)	H: PAL L: NTSC	H: PAL L: NTSC	H: 50Hz L: 60Hz	H: PAL L: NTSC

Z: HIGH IMPEADNCE


IC6001 SYSTEM CONTROL/SERVO IC
NORMAL Ⓗ SERVICE Ⓜ TEST Ⓛ (AUTO TRACKING OFF)
CAP ERROR
REVERSE Ⓗ CAP STOP Ⓜ FORWARD Ⓛ
TORQUE LIMIT
OSC1 (12MHz)
X6001
OSC2 (12MHz)
FG2
FG1
S-VHS P. B Ⓗ
P. B AI 2 Ⓗ
P. B AI 1 Ⓗ
REC CUR1
REC CUR2
REC CUR3
VIDEO EE Ⓛ
REC Ⓛ
REC Ⓗ
D. REC Ⓗ
PICTURE VR OUT
ARTIFICIAL V
ROTARY SW
VSS
TRICK PLAY Ⓛ
AUDIO HEAD SW
VIDEO HEAD SW
HEAD AMP SW
ENV SELECT
FM MUTE Ⓗ
AUDIO MUTE Ⓗ
D. A. REC Ⓗ
MIX Ⓗ (NOR/FM:MIX)
INSERT Ⓛ
D. FM. REC Ⓗ
A. MODE SELECT
POWER OFF Ⓗ
A. DUB Ⓗ
CYL PG MM
CTL AMP SW
CTL AMP IN
PULSE
PB. CTL
CTL (−) CLAMP
CTL (+) CLAMP
NTSC Ⓛ
V. CHANGE Ⓗ
FF/REW Ⓛ
SP Ⓗ/LP Ⓛ
CYL PFG
CYL ET.
5V (D)
5V (D)
5V (A)
5V (A/D)
FULL ERASE Ⓗ
IC6001-38 REC 4.0Vp-p (50nsec. div.)
IC6001-39 REC 4.6Vp-p (50nsec. div.)
IC6001-72, 73 REC 1.1Vp-p (1msec. div.)
IC6001-61 STILL 5.0Vp-p (10msec. div.)
IC6001-62, 63 REC 5.0Vp-p (10msec. div.)
IC6001-50 PLAY 5.0Vp-p (10msec. div.)
IC6001-89 PLAY 4.0Vp-p (10msec. div.)
IC6001-74 REC 4.8Vp-p (10msec. div.)
IC6001-53 REC 5.0Vp-p (5msec. div.)
IC6001-51, 52 REC 5.0Vp-p (10msec. div.)
IC6001-70, 71 REC 7.0Vp-p (1sec. div.)
IC6001-82, 83 REC 5.4Vp-p (10msec. div.)
R-CH Ⓛ
L-CH Ⓛ
FROM AUDIO
5P SERIAL CLOCK
5P SERIAL DATA IN
5P SERIAL DATA OUT
P6002 P3901 1 1
P6002 P3901 2 2
JK3904 (5PIN EDIT)
+5V
PICTURE VR IN
CHROMINANCE IN
DEW DET Ⓗ
P4001 P6503 10 10
VR6501 PICTURE CONTROL
SERVO 5V
VR3014 ANC
BILINGUAL/STEREO
STEREO Ⓛ
BILINGUAL Ⓛ
FROM DECODER
VTR Ⓛ
DBS Ⓛ
TO I/O PACK
SERIAL DATA
SERIAL CLOCK
RESET Ⓛ
TO OSD
MESECAM Ⓗ
TO VIDEO
RESET Ⓛ
SERIAL CLK
SERIAL DATA IN
SERIAL DATA OUT
AUTO TRACKING ENV.
TRACKING ENV.
FROM HEAD AMP
TAPE SENSOR LED
N. SW 5V
Q6001
D6005 SENSOR LED
40msec
120msec
LED ON
TAKE UP PHOTO
Q6002 TAKE UP PHOTO TR.
QR6003
QR6002
AI REC Ⓗ
AI REC Ⓗ
TO VIDEO
IC6003 T. REEL SNS
IC6002 S. REEL SNS
REG 5V
T. REEL PULSE
S. REEL PULSE
POSITION SW 2
POSITION SW 1
POSITION SW 3
P6001
GND
POSI. SW 2
POSI. SW 1
POSI. SW 3
MODE SW
SUPPLY PHOTO
S. TAB Ⓛ
IC6004
LOADING MOTOR DRIVE
LOADING M. LIMIT Ⓗ
LOADING Ⓗ
UN LOADING Ⓗ
P6003
LOADING M (−)
LOADING M (+)
CTL HEAD (−)
CTL HEAD (+)
P4003 5
P4003 6
CTL HEAD
IC2001-1, 9 (V)
IC2001-7 (V)
UNREG. 14V
LOADING MOTOR
S6001 S. TAB
Q6003 SUPPLY PHOTO TR.
POWER FAIL Ⓛ
SERIAL CLOCK
SERIAL DATA
P3003 P7501 25 8
P3003 P7501 13 20
P3003 P7501 14 19
P3901 P6002 P3003 P7501 3 3 12 21
C1023 (0.047F)
N. SW 5V
IC7504 RESET
IC7501 TIMER IC
RESET Ⓛ
VCC
SEL MUTE Ⓗ
TIMER CLK
TIMER LSN
TIMER TLK
CARA ON Ⓗ
FS CLK
FS CS Ⓗ
AUDIO DEF Ⓗ
INPUT SEL A
INPUT SEL B
AV2 OUT Ⓛ
OSD ON Ⓗ
STANBY Ⓛ
TO AUDIO
TO/FROM OSD
TO VIDEO
TO TUNER
TO DECODER
TO I/O PACK
P3003 P7501 24 9
P3003 P7501 4 29
P3003 P7501 11 22
P3003 P7501 10 23
P3003 P7501 9 24
P3003 P7501 21 12
P3003 P7501 8 25
P3003 P7501 6 27
P3003 P7501 5 28
P3003 P7501 16 17
P3003 P7501 17 16
P3003 P7501 26 7
P3003 P7501 23 10
P6503 P7504 15 10
IC7501-17, 18 STOP 5.0Vp-p (10msec. div.)
IC7501-19 STOP 5.0Vp-p (10msec. div.)
STAND BY D6503
QR6502
IC7505 RESET
IC7503 IR RECEIVER UNIT
IR
POWER FAIL Ⓛ
SERIAL CLOCK
SERIAL DATA OUT
SERIAL DATA IN
SAT IR
X OUT
X IN
X C OUT
X C IN
AI ON Ⓗ
JK3905
(SAT JACK)
Q3917
+B
32KHz (BACK UP)
X7501
VC7501 TIMER OSC
X7502
4. 19MHz
CVC D6504
QR6501
IC7501-41
IC7501-40
IC7501-39
IC7501-38
IC7501-37
IC7501-36
IC7501-35
IC7501-34
IC7501-33
IC7501-32
IC7501-58 STOP 2.0Vp-p (0.2μsec. d
IC7501-59 STOP 5.2Vp-p (0.2μsec. d
IC7501-62 STOP 2.8Vp-p (10μsec. di
IC7501-61 STOP 1.5Vp-p (10μsec. di
POSITION SW <TIMING CHART>
SW 1
SW 2
SW 3
POSITION NO. 0 7 1 7 3 7 2 7 4 7 5 7
MODE EJECT CASSETTE DOWN MID REV PLAY STOP3 STOP

	MODE1	MODE2	MODE3	MODE4
PIN 111 (SYSTEM1)	H: MESECAM L: PAL Z: AUTO	H: MESECAM L: PAL	H: PAL L: NTSC Z: AUTO	H: MESECAM L: PAL Z: AUTO
PIN 110 (SYSTEM2)	H: EXCEPT NTSC L: NTSC-M	H: SECAM L: PAL Z: AUTO	—	H: EXCEPT NTSC L: NTSC-M
PIN 34 (SYSTEM3)	H: NORMAL L: DBS/CANAL	H: NORMAL L: DBS/CANAL	—	H: NORMAL L: DBS/CANAL
PIN 35 (SYSTEM4)	H: PAL-I L: B/G/D/K	H: SECAM L: PAL	—	H: PAL-I L: B/G/D/K
PIN 36 (SYSTEM5)	H: PAL L: NTSC	H: PAL L: NTSC	H: 50Hz L: 60Hz	H: PAL L: NTSC

Z: HIGH IMPEADNCE

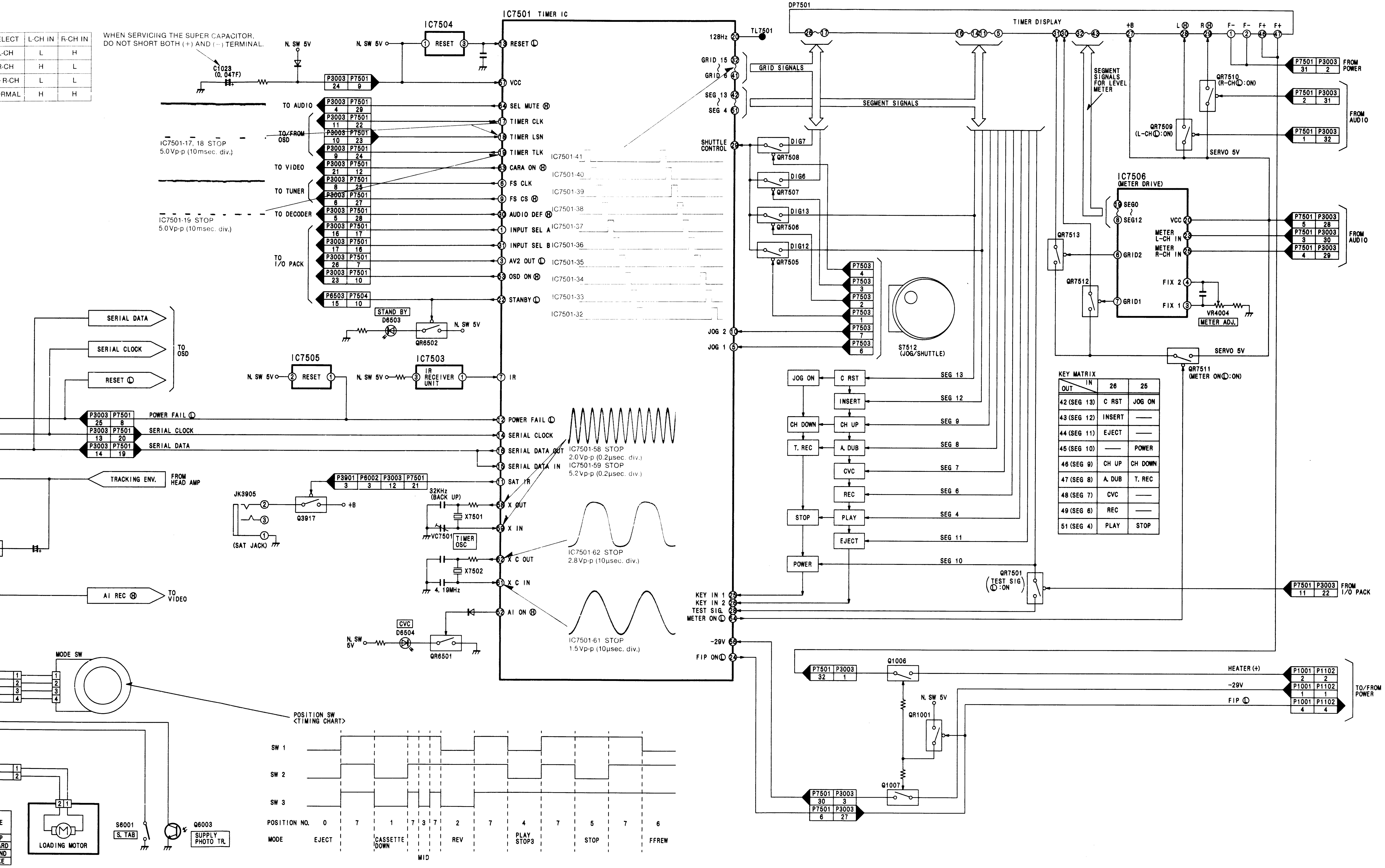
SELECT	L-CH IN	R-CH IN
L-CH	L	H
R-CH	H	L
L+R-CH	L	L
NORMAL	H	H

WHEN SERVICING THE SUPER CAPACITOR, DO NOT SHORT BOTH (+) AND (−) TERMINAL.

INPUT		OUTPUT		MODE
PIN5	PIN6	PIN1	PIN9	
L	L	OPEN	OPEN	STOP
H	L	L	H	FORWARD
L	H	H	L	REWIND
H	H	L	L	BRAKE

ELECT	L-CH IN	R-CH IN
-CH	L	H
-CH	H	L
-R-CH	L	L
RMAL	H	H

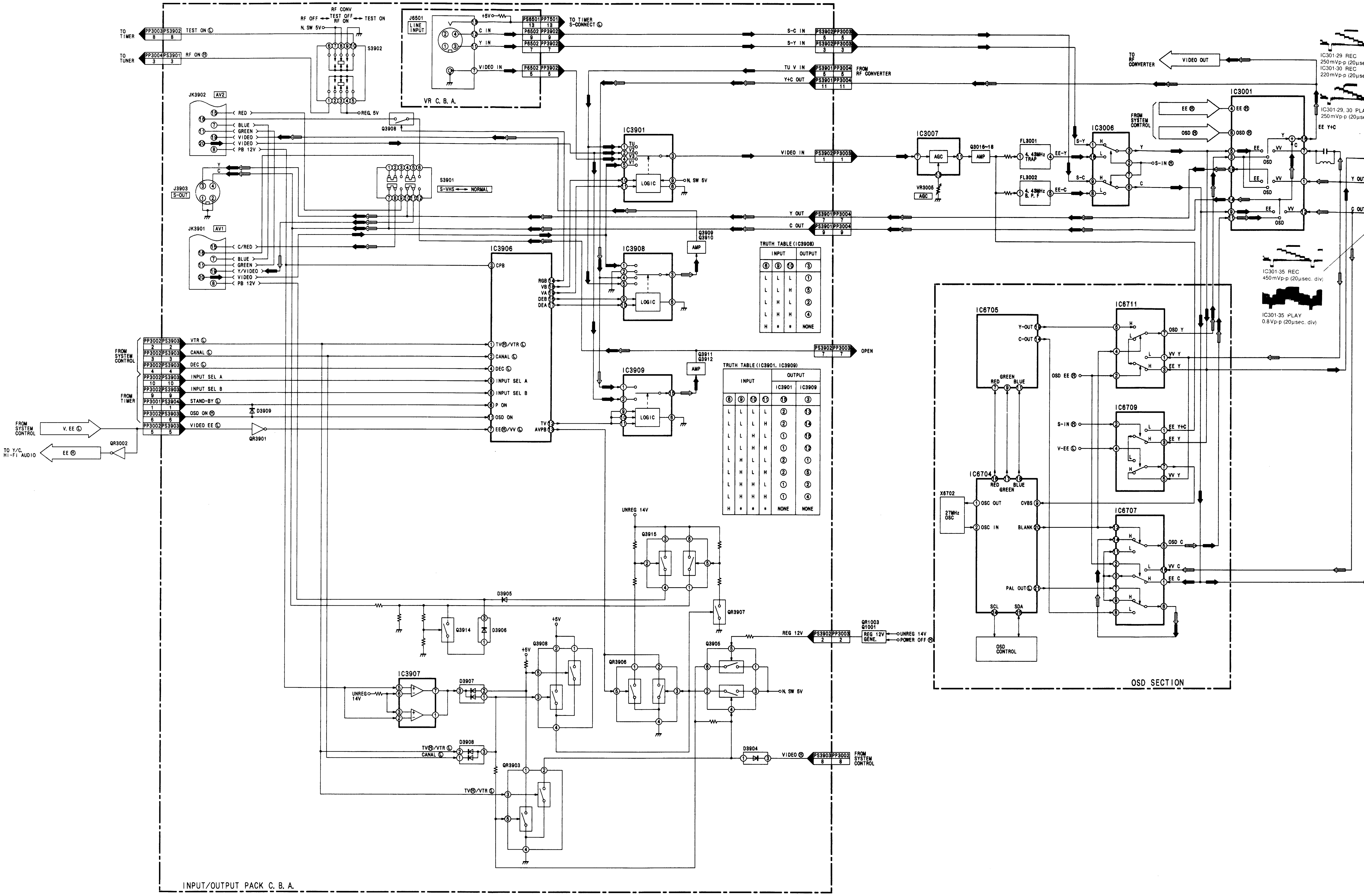
WHEN SERVICING THE SUPER CAPACITOR, DO NOT SHORT BOTH (+) AND (–) TERMINAL.


IC7501 TIMER IC
IC7504 RESET
IC7505 RESET
IC7503 IR RECEIVER UNIT
IC7506 (METER DRIVE)
DP7501 TIMER DISPLAY
C1023 (0.047F)
N. SW 5V
RESET Ⓛ
VCC
TO AUDIO
TO/FROM OSD
TO VIDEO
TO TUNER
TO DECODER
TO I/O PACK
SEL MUTE Ⓗ
TIMER CLK
TIMER LSN
TIMER TLK
CARA ON Ⓗ
FS CLK
FS CS Ⓗ
AUDIO DEF Ⓗ
INPUT SEL A
INPUT SEL B
AV2 OUT Ⓛ
OSD ON Ⓗ
STANBY Ⓛ
IR
POWER FAIL Ⓛ
SERIAL CLOCK
SERIAL DATA OUT
SERIAL DATA IN
SAT IR
X OUT
X IN
X C OUT
X C IN
AI ON Ⓗ
IC7501-17, 18 STOP 5.0Vp-p (10msec. div.)
IC7501-19 STOP 5.0Vp-p (10msec. div.)
IC7501-58 STOP 2.0Vp-p (0.2μsec. div.)
IC7501-59 STOP 5.2Vp-p (0.2μsec. div.)
IC7501-62 STOP 2.8Vp-p (10μsec. div.)
IC7501-61 STOP 1.5Vp-p (10μsec. div.)
IC7501-41 … IC7501-32
STAND BY D6503
QR6502
SERIAL DATA
SERIAL CLOCK
RESET Ⓛ
TO OSD
TRACKING ENV.
FROM HEAD AMP
AI REC Ⓗ
TO VIDEO
JK3905 (SAT JACK)
Q3917
32KHz (BACK UP)
X7501
VC7501 TIMER OSC
X7502
4. 19MHz
CVC D6504
QR6501
MODE SW
POSITION SW <TIMING CHART>
SW 1
SW 2
SW 3
POSITION NO. 0 7 1 7 3 7 2 7 4 7 5 7 6
MODE EJECT CASSETTE DOWN MID REV PLAY STOP3 STOP FFREW
S6001 S. TAB
Q6003 SUPPLY PHOTO TR.
LOADING MOTOR
128Hz
TL7501
GRID 15 ~ GRID 6
SEG 13 ~ SEG 4
GRID SIGNALS
SEGMENT SIGNALS
SEGMENT SIGNALS FOR LEVEL METER
SHUTTLE CONTROL
DIG7 QR7508
DIG6 QR7507
DIG13 QR7506
DIG12 QR7505
JOG 2
JOG 1
S7512 (JOG/SHUTTLE)
KEY IN 1
KEY IN 2
TEST SIG.
METER ON Ⓛ
-29V
FIP ON Ⓛ
JOG ON
C RST
INSERT
CH DOWN
CH UP
T. REC
A. DUB
CVC
REC
STOP
PLAY
EJECT
POWER
QR7501 (TEST SIG Ⓛ:ON)
FROM I/O PACK
FROM POWER
FROM AUDIO
QR7510 (R-CH Ⓛ:ON)
QR7509 (L-CH Ⓛ:ON)
SERVO 5V
QR7513
QR7512
SEG0 ~ SEG12
GRID2
GRID1
METER L-CH IN
METER R-CH IN
FIX 2
FIX 1
VR4004 METER ADJ.
QR7511 (METER ON Ⓛ:ON)
Q1006
QR1001
Q1007
HEATER (+)
-29V
FIP Ⓛ
TO/FROM POWER

KEY MATRIX

OUT \ IN	26	25
42 (SEG 13)	C RST	JOG ON
43 (SEG 12)	INSERT	——
44 (SEG 11)	EJECT	——
45 (SEG 10)	——	POWER
46 (SEG 9)	CH UP	CH DOWN
47 (SEG 8)	A. DUB	T. REC
48 (SEG 7)	CVC	——
49 (SEG 6)	REC	——
51 (SEG 4)	PLAY	STOP

3-3. LUMINANCE & CHROMINANCE BLOCK DIAGRAM

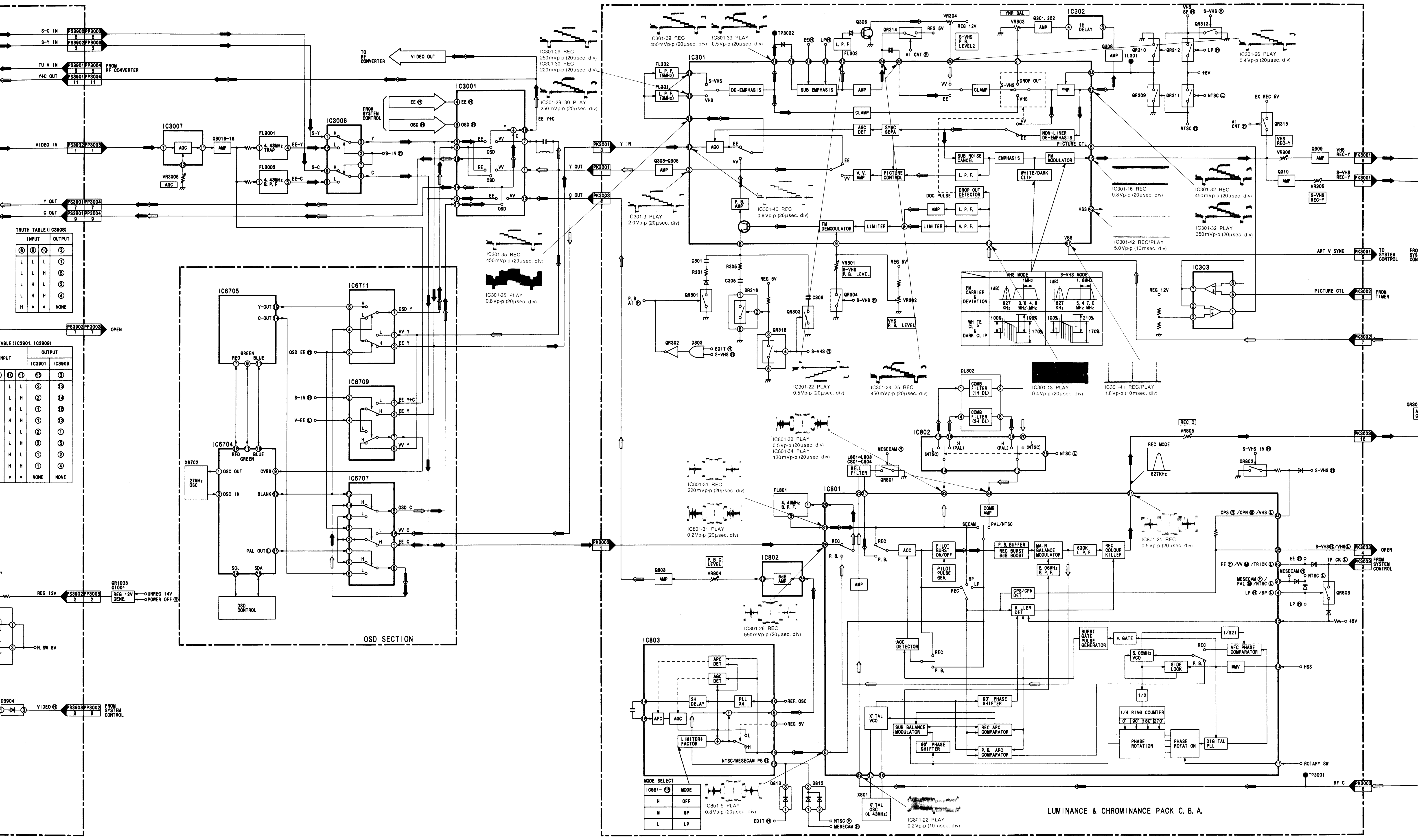

TO TIMER
TEST ON Ⓛ
TO TUNER
RF ON Ⓗ
RF CONV
RF OFF
TEST OFF
RF ON
TEST ON
N. SW 5V
S3902
J6501
LINE INPUT
+5V
C IN
Y IN
VIDEO IN
VR C. B. A.
TO TIMER S-CONNECT Ⓛ
S-C IN
S-Y IN
TU V IN
Y+C OUT
FROM RF CONVERTER
JK3902 AV2
RED
BLUE
GREEN
VIDEO
PB 12V
REG. 5V
Q3908
J3903 S-OUT
S3901
S-VHS NORMAL
JK3901 AV1
C/RED
Y/VIDEO
IC3901
TU
V2
V3
V1
LOGIC
N. SW 5V
IC3906
CPB
RGB
VB
VA
DEB
DEA
IC3908
IC3909
Q3909
Q3910
Q3911
Q3912
AMP
Y OUT
C OUT
OPEN
FROM SYSTEM CONTROL
FROM TIMER
VTR Ⓛ
CANAL Ⓛ
DEC Ⓛ
INPUT SEL A
INPUT SEL B
STAND-BY Ⓛ
OSD ON Ⓗ
VIDEO EE Ⓛ
TVⒽ/VTR Ⓛ
P ON
OSD ON
EEⒽ/VV Ⓛ
TV
AVPB
D3909
V. EE Ⓛ
QR3901
QR3002
TO Y/C, HI-FI AUDIO
EE Ⓗ
UNREG 14V
Q3915
D3905
Q3914
D3906
QR3907
IC3907
D3907
Q3906
+5V
QR3906
Q3905
N. SW 5V
REG 12V
QR1003
Q1001
REG 12V GENE.
UNREG 14V
POWER OFF Ⓗ
D3908
CANAL Ⓛ
QR3903
TVⒽ/VTR Ⓛ
D3904
VIDEO Ⓗ
FROM SYSTEM CONTROL
INPUT/OUTPUT PACK C. B. A.
IC3007
AGC
VR3005
Q3016-18
AMP
FL3001
4. 43MHz TRAP
FL3002
4. 43MHz B. P. F
EE-Y
EE-C
IC3006
S-Y
S-C
S-IN Ⓗ
TO RF CONVERTER
VIDEO OUT
FROM SYSTEM CONTROL
EE Ⓗ
OSD Ⓗ
IC3001
EE
OSD
VV
EE Y+C
Y OUT
C OUT
IC301-29 REC
250mVp-p (20μse
IC301-30 REC
220mVp-p (20μse
IC301-29, 30 PLA
250mVp-p (20μse
IC301-35 REC
450mVp-p (20μsec. div)
IC301-35 PLAY
0.8Vp-p (20μsec. div)
IC6705
Y-OUT
C-OUT
RED
GREEN
BLUE
IC6711
OSD Y
VV Y
EE Y
OSD EE Ⓗ
IC6709
S-IN Ⓗ
V-EE Ⓛ
EE Y+C
IC6704
X6702
27MHz OSC
OSC OUT
OSC IN
CVBS
BLANK
PAL OUT Ⓛ
SCL
SDA
OSD CONTROL
IC6707
OSD C
VV C
EE C
OSD SECTION

TRUTH TABLE (IC3908)

INPUT			OUTPUT
⑥	⑨	⑩	③
L	L	L	①
L	L	H	⑤
L	H	L	②
L	H	H	④
H	*	*	NONE

TRUTH TABLE (IC3901, IC3909)

INPUT				OUTPUT	
				IC3901	IC3909
⑥	⑨	⑩	⑪	⑮	③
L	L	L	L	②	⑬
L	L	L	H	②	⑭
L	L	H	L	①	⑮
L	L	H	H	①	⑫
L	H	L	L	②	①
L	H	L	H	②	⑤
L	H	H	L	①	②
L	H	H	H	①	④
H	*	*	*	NONE	NONE


S-C IN
S-Y IN
TU V IN
Y+C OUT
FROM RF CONVERTER
TO RF CONVERTER
VIDEO OUT
VIDEO IN
Y OUT
C OUT
OPEN
REG 12V
UNREG 14V
POWER OFF Ⓗ
N. SW 5V
VIDEO Ⓗ
FROM SYSTEM CONTROL
PS3902 PP3003
PS3901 PP3004
PS3903 PP3002
IC3007
AGC
VR3005
Q3016~18
AMP
FL3001 4.43MHz TRAP
FL3002 4.43MHz B.P.F
EE-Y
EE-C
IC3006
S-IN Ⓗ
IC3001
EE Ⓗ
OSD Ⓗ
EE Y+C
QR1003 Q1001
REG 12V GENE.
IC6705
Y-OUT
C-OUT
RED GREEN BLUE
IC6704
X6702 27MHz OSC
OSC OUT
OSC IN
CVBS
BLANK
PAL OUT
SCL SDA
OSD CONTROL
IC6711
OSD Y
VV Y
EE Y
IC6709
EE Y+C
V-EE Ⓛ
IC6707
OSD C
VV C
EE C
OSD EE Ⓗ
OSD SECTION
IC301-29 REC 250mVp-p (20μsec. div)
IC301-30 REC 220mVp-p (20μsec. div)
IC301-29, 30 PLAY 250mVp-p (20μsec. div)
IC301-35 REC 450mVp-p (20μsec. div)
IC301-35 PLAY 0.8Vp-p (20μsec. div)
IC301-39 REC 450mVp-p (20μsec. div)
IC301-39 PLAY 0.5Vp-p (20μsec. div)
IC301-3 PLAY 2.0Vp-p (20μsec. div)
IC301-40 REC 0.9Vp-p (20μsec. div)
IC301-16 REC 0.8Vp-p (20μsec. div)
IC301-42 REC/PLAY 5.0Vp-p (10msec. div)
IC301-26 PLAY 0.4Vp-p (20μsec. div)
IC301-32 REC 450mVp-p (20μsec. div)
IC301-32 PLAY 350mVp-p (20μsec. div)
IC301-22 PLAY 0.5Vp-p (20μsec. div)
IC301-24, 25 REC 450mVp-p (20μsec. div)
IC301-13 PLAY 0.4Vp-p (20μsec. div)
IC301-41 REC/PLAY 1.8Vp-p (10msec. div)
TP3022
IC301
FL302 L.P.F. (5MHz)
FL301 L.P.F. (3MHz)
DE-EMPHASIS
SUB EMPHASIS
AMP
CLAMP
DROP OUT
YNR
AGC DET
SYNC SEPA
NON-LINER DE-EMPHASIS
PICTURE CTL
AGC
V.V. AMP
PICTURE CONTROL
SUB NOISE CANCEL
EMPHASIS
FM MODULATOR
WHITE/DARK CLIP
L.P.F.
DOC PULSE
DROP OUT DETECTOR
H.P.F.
LIMITER
FM DEMODULATOR
P.B. AMP
HSS
VSS
Q306
QR314
REG 5V
FL303
AI CNT Ⓗ
VR304
REG 12V
S-VHS P.B. LEVEL2
YNR BAL
VR303
Q301, 302
IC302 1H DELAY
Q308
TL301
QR310
QR312
QR313
QR309
QR311
VHS SP Ⓗ
S-VHS Ⓗ
LP Ⓗ
+5V
NTSC Ⓛ
NTSC Ⓗ
EX REC 5V
AI CNT
QR315
VHS REC-Y
VR306
Q309
Q310
VR305
S-VHS REC-Y
PK3001
PK3002
PK3003
Y IN
Y OUT
C OUT
Q303~Q305
ART V SYNC
TO SYSTEM CONTROL
PICTURE CTL
FROM TIMER
IC303
REG 12V
P.B AI
C301 R301
QR301
R305
C305
QR316
REG 5V
VR301
S-VHS P.B. LEVEL
QR304
S-VHS
VR302
VHS P.B. LEVEL
C306
QR303
QR302
D303
EDIT Ⓗ
S-VHS Ⓗ
FM CARRIER & DEVIATION
VHS MODE
S-VHS MODE
(dB)
1MHz
1.6MHz
627 KHz
3.8 4.8 MHz MHz
5.4 7.0 MHz MHz
WHITE CLIP & DARK CLIP
100%
190%
170%
210%
DL802
COMB FILTER (1H DL)
COMB FILTER (2H DL)
IC802
H (PAL)
L (NTSC)
NTSC Ⓛ
IC801-32 PLAY 0.5Vp-p (20μsec. div)
IC801-34 PLAY 130mVp-p (20μsec. div)
IC801-31 REC 220mVp-p (20μsec. div)
IC801-31 PLAY 0.2Vp-p (20μsec. div)
IC801-26 REC 550mVp-p (20μsec. div)
IC801-21 REC 0.5Vp-p (20μsec. div)
IC801-5 PLAY 0.8Vp-p (20μsec. div)
IC801-22 PLAY 0.2Vp-p (10msec. div)
MESECAM Ⓗ
L801~L803 C801~C804 BELL FILTER
QR801
FL801 4.43MHz B.P.F.
IC801
COMB AMP
SECAM
PAL/NTSC
REC
P.B.
ACC
PILOT BURST ON/OFF
PILOT PULSE GEN.
P.B. BUFFER REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
5.06MHz B.P.F.
630K L.P.F.
REC COLOUR KILLER
CPS/CPN DET
KILLER DET
SP LP
ACC DETECTOR
BURST GATE PULSE GENERATOR
V. GATE
1/321
AFC PHASE COMPARATOR
5.02MHz VCO
SIDE LOCK
MMV
1/2
1/4 RING COUNTER
0° 90° 180° 270°
PHASE ROTATION
DIGITAL PLL
90° PHASE SHIFTER
X' TAL VCO
SUB BALANCE MODULATOR
REC APC COMPARATOR
P.B. APC COMPARATOR
X801 X' TAL OSC (4.43MHz)
REC C
VR805
REC MODE
627KHz
S-VHS IN Ⓗ
QR802
CPS Ⓗ /CPN Ⓜ /VHS Ⓛ
S-VHSⒽ/VHSⓁ
EE Ⓗ /VV Ⓜ /TRICK Ⓛ
TRICK Ⓛ
MESECAM Ⓗ
MESECAM Ⓗ / PAL Ⓜ /NTSC Ⓛ
NTSC Ⓛ
LP Ⓗ /SP Ⓛ
LP Ⓗ
QR803
HSS
ROTARY SW
TP3001
RF C
Q803
AMP
P.B.C LEVEL
VR804
IC802 6dB AMP
IC803
APC DET
AGC DET
2H DELAY
PLL X4
APC
AGC
LIMITER+ FACTOR
REF. OSC
REG 5V
NTSC/MESECAM PB Ⓗ
D813
D812
EDIT Ⓗ
NTSC Ⓗ
MESECAM Ⓗ
LUMINANCE & CHROMINANCE PACK C.B.A.

TRUTH TABLE (IC3908)

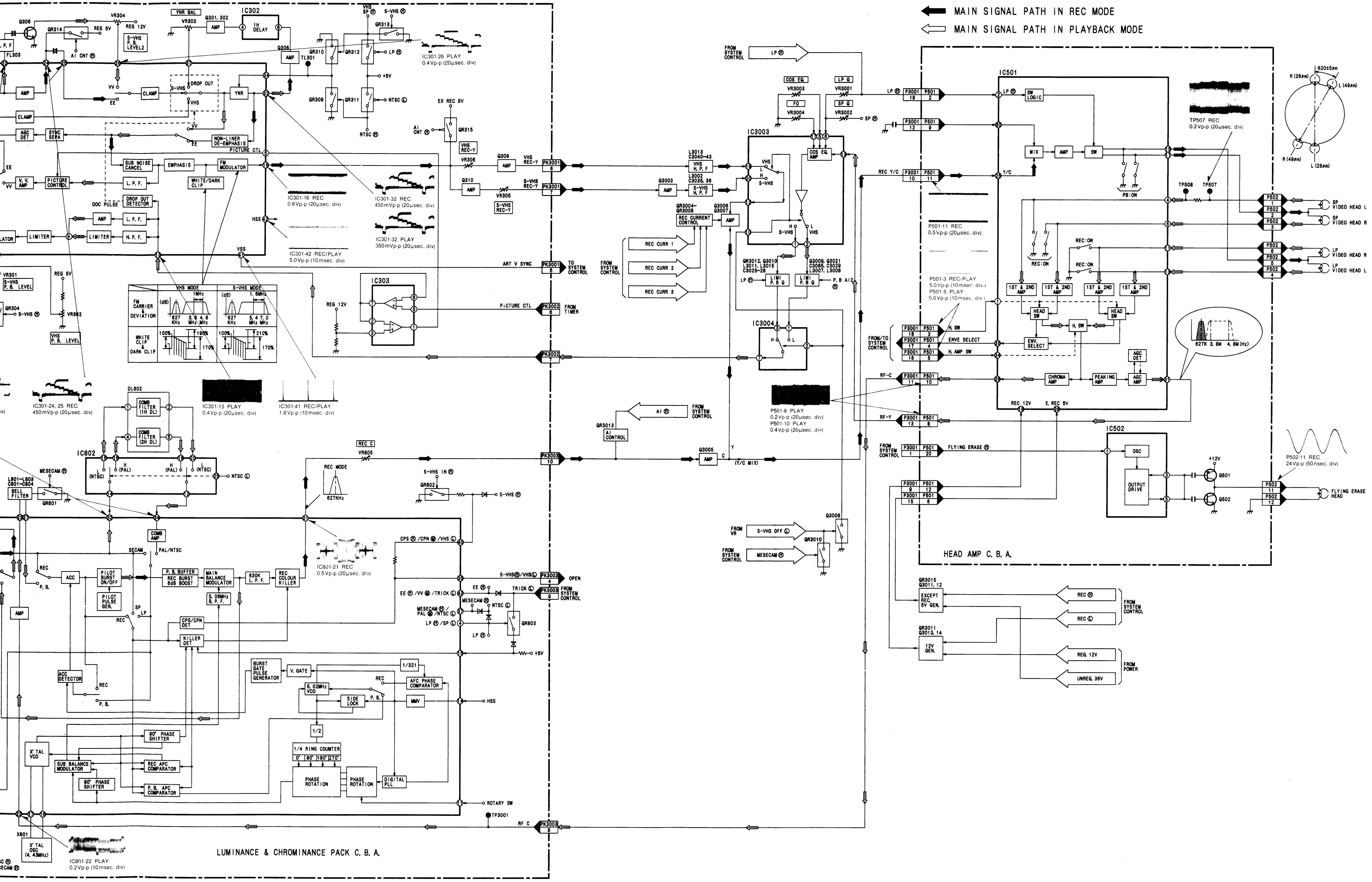
INPUT			OUTPUT
⑥	⑨	⑩	③
L	L	L	①
L	L	H	⑤
L	H	L	②
L	H	H	④
H	*	*	NONE

ABLE (IC3901, IC3909)

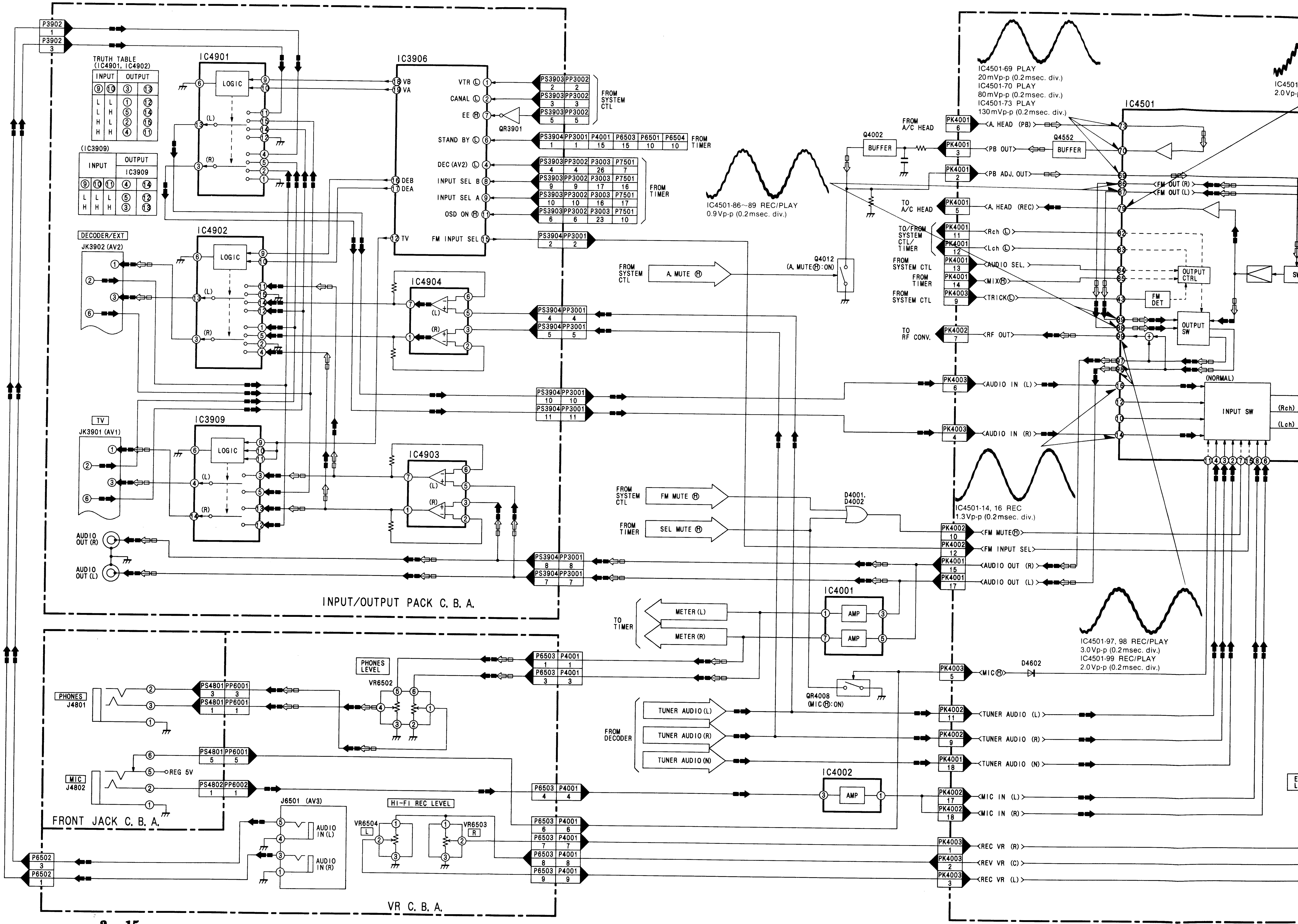
NPUT		OUTPUT	
		IC3901	IC3909
⑩	⑪	⑮	③
L	L	②	⑬
L	H	②	⑭
H	L	①	⑮
H	H	①	⑫
L	L	②	①
L	H	②	⑤
H	L	①	②
H	H	①	④
*	*	NONE	NONE

MODE SELECT

IC851- ⑱	MODE
H	OFF
M	SP
L	LP


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
LUMINANCE & CHROMINANCE PACK C. B. A.
HEAD AMP C. B. A.
IC302
1H DELAY
YNR BAL
VR303
VR304
Q301, 302
AMP
Q306
Q314
REG 5V
REG 12V
AI CNT Ⓗ
S-VHS P. B. LEVEL2
FL303
CLAMP
DROP OUT
S-VHS
VHS
YNR
AGC DET
SYNC SEPA
NON-LINER DE-EMPHASIS
PICTURE CTL
SUB NOISE CANCEL
EMPHASIS
FM MODULATOR
L. P. F.
WHITE/DARK CLIP
V. V. AMP
PICTURE CONTROL
DOC PULSE
DROP OUT DETECTOR
H. P. F.
LIMITER
HSS
VSS
Q308
TL301
Q310
Q312
Q313
Q309
Q311
VHS SP Ⓡ
S-VHS Ⓡ
LP Ⓡ
+5V
NTSC Ⓛ
NTSC Ⓡ
IC301-26 PLAY 0.4Vp-p (20μsec. div)
EX REC 5V
AI CNT Ⓗ
QR315
VHS REC-Y
VR306
Q309 AMP
VHS REC-Y
Q310 AMP
VR305
S-VHS REC-Y
PK3001 6
PK3001 7
IC301-16 REC 0.8Vp-p (20μsec. div)
IC301-32 REC 450mVp-p (20μsec. div)
IC301-32 PLAY 350mVp-p (20μsec. div)
IC301-42 REC/PLAY 5.0Vp-p (10msec. div)
ART V SYNC
PK3001 5
TO SYSTEM CONTROL
VR301
S-VHS P. B. LEVEL
REG 5V
QR304
VR302
VHS P. B. LEVEL
VHS MODE
S-VHS MODE
FM CARRIER & DEVIATION
(dB)
1MHz
627 KHz
3.8 MHz
4.8 MHz
1.6MHz
5.4 MHz
7.0 MHz
WHITE CLIP & DARK CLIP
100%
190%
170%
210%
IC303
REG 12V
PICTURE CTL
PK3002 6
FROM TIMER
PK3002 7
IC301-24, 25 REC 450mVp-p (20μsec. div)
IC301-13 PLAY 0.4Vp-p (20μsec. div)
IC301-41 REC/PLAY 1.8Vp-p (10msec. div)
DL802
COMB FILTER (1H DL)
COMB FILTER (2H DL)
IC802
(NTSC)
(PAL)
NTSC Ⓛ
MESECAM Ⓗ
L801~L803 C801~C804 BELL FILTER
QR801
REC C
VR805
PK3003 10
REC MODE
627KHz
S-VHS IN Ⓗ
QR802
S-VHS Ⓗ
COMB AMP
SECAM
PAL/NTSC
IC801-21 REC 0.5Vp-p (20μsec. div)
CPS Ⓗ/CPN Ⓜ/VHS Ⓛ
ACC
PILOT BURST ON/OFF
PILOT PULSE GEN.
P. B. BUFFER
REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
630K L. P. F.
REC COLOUR KILLER
5.06MHz B. P. F.
S-VHSⒽ/VHSⓁ
PK3003 4
OPEN
EE Ⓗ/VV Ⓜ/TRICK Ⓛ
TRICK Ⓛ
PK3003 9
FROM SYSTEM CONTROL
MESECAM Ⓗ/PAL Ⓜ/NTSC Ⓛ
LP Ⓗ/SP Ⓛ
QR803
+5V
CPS/CPN DET
KILLER DET
ACC DETECTOR
BURST GATE PULSE GENERATOR
V. GATE
1/321
AFC PHASE COMPARATOR
5.02MHz VCO
SIDE LOCK
MMV
HSS
1/2
1/4 RING COUNTER
0° 90° 180° 270°
90° PHASE SHIFTER
X'TAL VCO
SUB BALANCE MODULATOR
REC APC COMPARATOR
P. B. APC COMPARATOR
PHASE ROTATION
DIGITAL PLL
ROTARY SW
TP3001
RF C
PK3003 8
X801
X'TAL OSC (4.43MHz)
IC801-22 PLAY 0.2Vp-p (10msec. div)
FROM SYSTEM CONTROL
LP Ⓗ
COS EQ.
VR3003
FO
VR3004
LP Q
VR3001
SP Q
VR3002
SP Ⓗ
IC3003
COS EQ. AMP
L3013 C3040~43
VHS H. P. F
L3002 C3035, 36
S-VHS H. P. F
Q3003 AMP
QR3004~QR3008
REC CURRENT CONTROL
Q3006 Q3007 AMP
REC CURR 1
REC CURR 2
REC CURR 3
QR3012, Q3010 L3011, L3015 C3025~28
Q3009, Q3021 C3035, C3029 L3007, L3008
LIMI P. B Q
P. B AI2 Ⓗ
IC3004
AI Ⓗ
FROM SYSTEM CONTROL
QR3013
AI CONTROL
Q3005 AMP
(Y/C MIX)
FROM VR
S-VHS OFF Ⓛ
MESECAM Ⓗ
Q3008
QR3010
P501-8 PLAY 0.2Vp-p (20μsec. div)
P501-10 PLAY 0.4Vp-p (20μsec. div)
P501-11 REC 0.5Vp-p (20μsec. div)
P501-3 REC/PLAY 5.0Vp-p (10msec. div.)
P501-5 PLAY 5.0Vp-p (10msec. div.)
P3001 P501
REC Y/C
H. SW
ENVE SELECT
H. AMP SW
FROM/TO SYSTEM CONTROL
RF-C
RF-Y
FLYING ERASE Ⓗ
IC501
SW LOGIC
MIX
AMP
SW
PB:ON
REC:ON
1ST & 2ND AMP
HEAD SW
H. SW
ENV. SELECT
CHROMA AMP
PEAKING AMP
AGC DET
AGC AMP
REC 12V
E. REC 5V
TP507 REC 0.2Vp-p (20μsec. div)
TP508
TP507
627K 3.8M 4.8M (Hz)
P502
SP VIDEO HEAD L
SP VIDEO HEAD R
LP VIDEO HEAD R
LP VIDEO HEAD L
R (26μm)
620±5μm
L (49μm)
R (49μm)
L (26μm)
IC502
OSC
OUTPUT DRIVE
+12V
Q501
Q502
P502-11 REC 24Vp-p (50nsec. div)
FLYING ERASE HEAD
QR3015 Q3011, 12
EXCEPT REC. 5V GEN.
REC Ⓗ
REC Ⓛ
FROM SYSTEM CONTROL
QR3011 Q3013, 14
12V GEN.
REG. 12V
UNREG. 36V
FROM POWER

3-4. Hi-Fi AUDIO BLOCK DIAGRAM

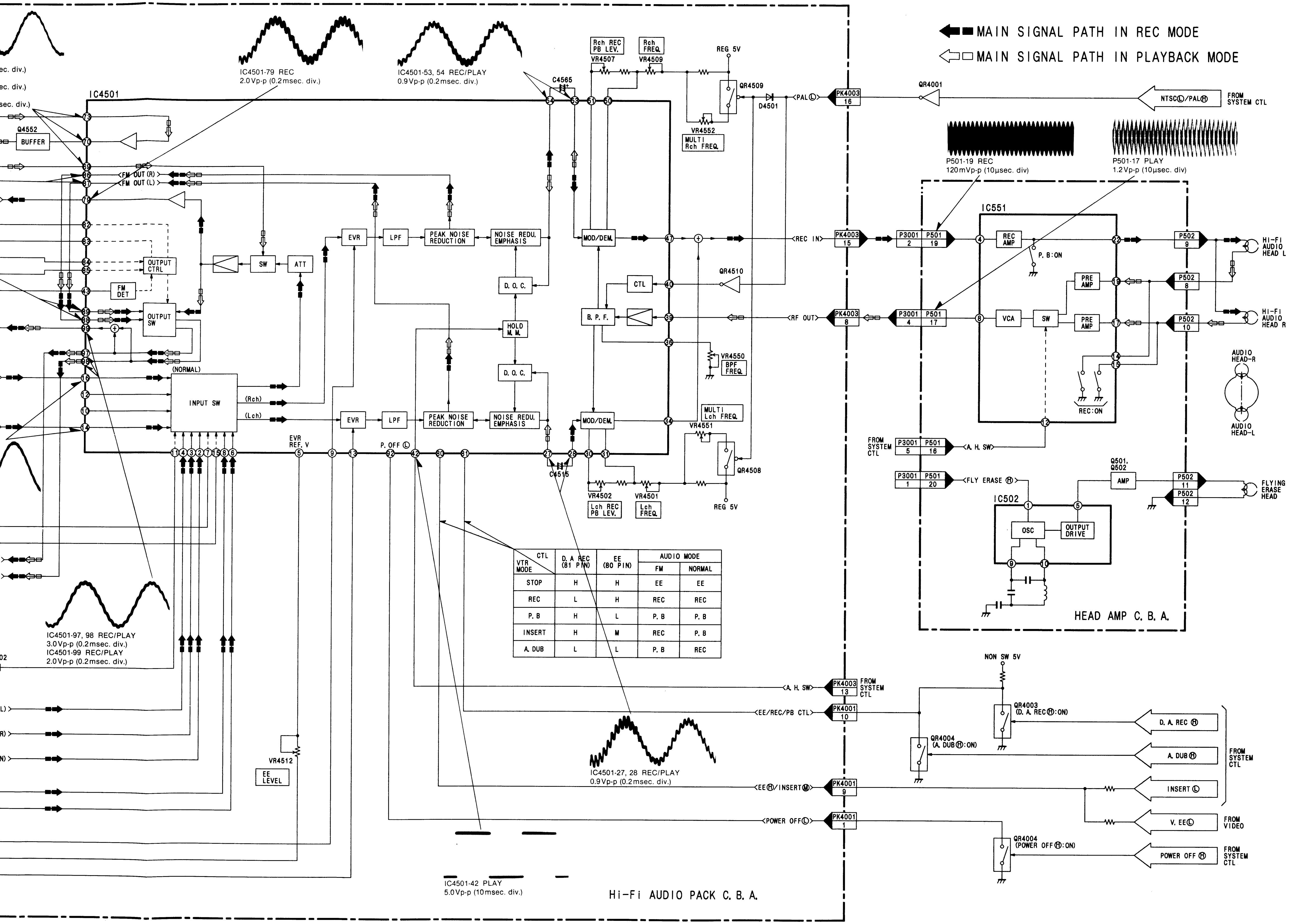

P3902 1
P3902 3
IC4901
LOGIC
IC3906
VB
VA
DEB
DEA
TV
VTR Ⓛ
CANAL Ⓛ
EE Ⓗ
QR3901
STAND BY Ⓛ
DEC (AV2) Ⓛ
INPUT SEL B
INPUT SEL A
OSD ON Ⓗ
FM INPUT SEL
PS3903 PP3002
FROM SYSTEM CTL
PS3904 PP3001 P4001 P6503 P6501 P6504
FROM TIMER
PS3903 PP3002 P3003 P7501
IC4902
DECODER/EXT
JK3902 (AV2)
IC4904
IC3909
TV
JK3901 (AV1)
IC4903
AUDIO OUT (R)
AUDIO OUT (L)
INPUT/OUTPUT PACK C. B. A.
PHONES LEVEL
VR6502
PHONES
J4801
PS4801 PP6001
PS4802 PP6002
MIC
J4802
REG 5V
FRONT JACK C. B. A.
J6501 (AV3)
AUDIO IN (L)
AUDIO IN (R)
HI-FI REC LEVEL
VR6504 L
VR6503 R
P6502
VR C. B. A.
P6503 P4001
A. MUTE Ⓗ
FM MUTE Ⓗ
SEL MUTE Ⓗ
D4001, D4002
Q4012 (A. MUTEⒽ:ON)
IC4501-86~89 REC/PLAY
0.9Vp-p (0.2msec. div.)
Q4002
BUFFER
Q4552
BUFFER
FROM A/C HEAD
TO A/C HEAD
TO/FROM SYSTEM CTL/ TIMER
FROM SYSTEM CTL
FROM TIMER
TO RF CONV.
PK4001
PK4002
PK4003
A. HEAD (PB)
PB OUT
PB ADJ. OUT
A. HEAD (REC)
Rch Ⓛ
Lch Ⓛ
AUDIO SEL.
MIXⒽ
TRICKⓁ
RF OUT
AUDIO IN (L)
AUDIO IN (R)
FM MUTEⒽ
FM INPUT SEL
AUDIO OUT (R)
AUDIO OUT (L)
MICⒽ
TUNER AUDIO (L)
TUNER AUDIO (R)
TUNER AUDIO (N)
MIC IN (L)
MIC IN (R)
REC VR (R)
REV VR (C)
REC VR (L)
IC4501-69 PLAY
20mVp-p (0.2msec. div.)
IC4501-70 PLAY
80mVp-p (0.2msec. div.)
IC4501-73 PLAY
130mVp-p (0.2msec. div.)
IC4501
FM OUT (R)
FM OUT (L)
OUTPUT CTRL
FM DET
OUTPUT SW
(NORMAL)
INPUT SW
(Rch)
(Lch)
IC4501-14, 16 REC
1.3Vp-p (0.2msec. div.)
IC4501-97, 98 REC/PLAY
3.0Vp-p (0.2msec. div.)
IC4501-99 REC/PLAY
2.0Vp-p (0.2msec. div.)
D4602
QR4008 (MICⒽ:ON)
IC4001
AMP
METER (L)
METER (R)
TO TIMER
FROM DECODER
IC4002
AMP

TRUTH TABLE (IC4901, IC4902)

INPUT		OUTPUT	
⑨	⑩	③	⑬
L	L	①	⑫
L	H	⑤	⑭
H	L	②	⑮
H	H	④	⑪

(IC3909)

INPUT			OUTPUT IC3909	
⑨	⑩	⑪	④	⑭
L	L	L	⑥	⑫
H	H	H	③	⑬

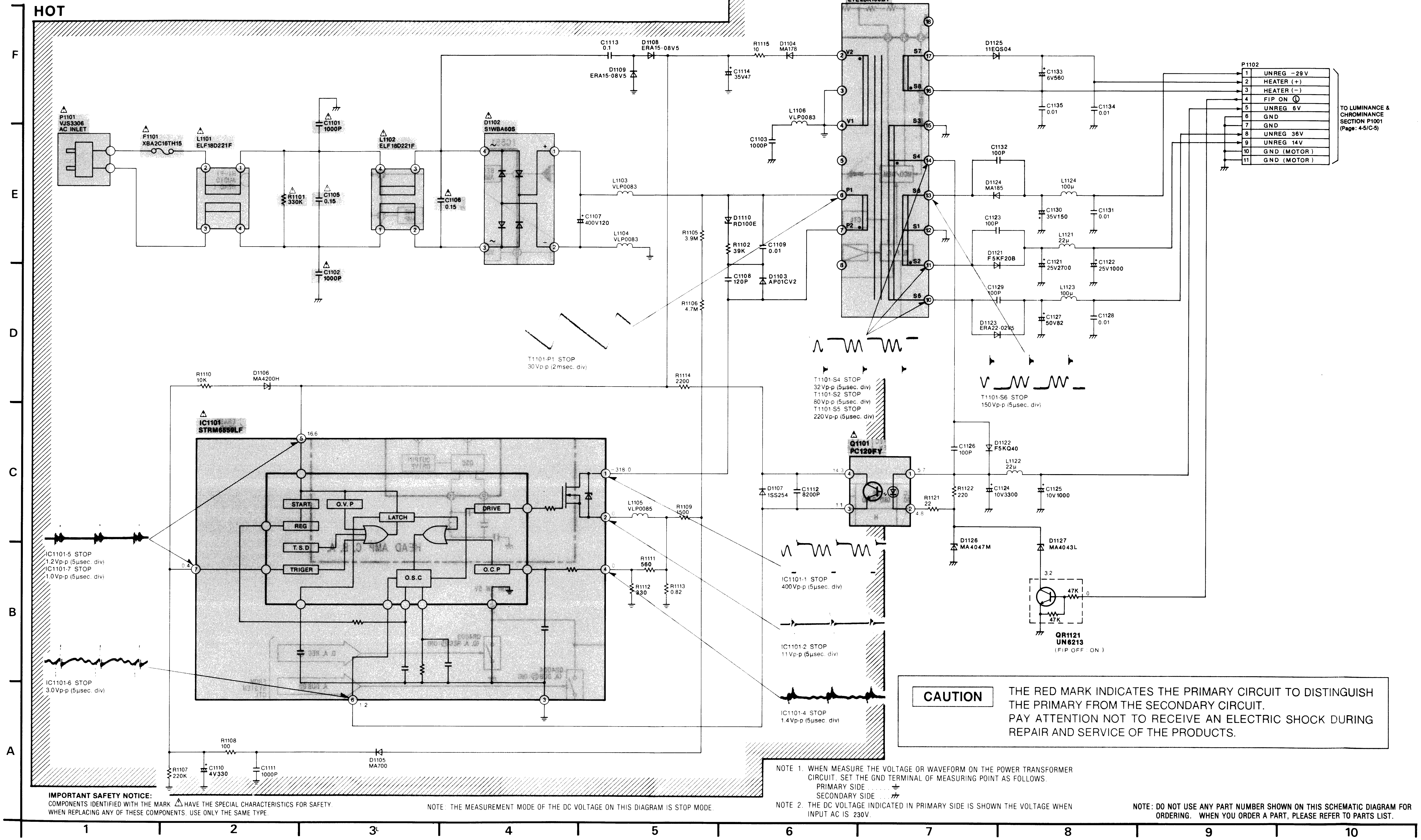

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
ec. div.)
ec. div.)
sec. div.)
IC4501
Q4552
BUFFER
IC4501-79 REC
2.0Vp-p (0.2msec. div.)
IC4501-53, 54 REC/PLAY
0.9Vp-p (0.2msec. div.)
C4565
Rch REC PB LEV.
VR4507
Rch FREQ.
VR4509
REG 5V
QR4509
D4501
VR4552
MULTI Rch FREQ.
PAL Ⓛ
PK4003 16
QR4001
NTSCⓁ/PALⒽ
FROM SYSTEM CTL
FM OUT (R)
FM OUT (L)
OUTPUT CTRL
FM DET
OUTPUT SW
SW
ATT
EVR
LPF
PEAK NOISE REDUCTION
NOISE REDU. EMPHASIS
D. O. C.
HOLD M. M.
MOD/DEM.
CTL
B. P. F.
QR4510
VR4550
BPF FREQ.
REC IN
RF OUT
PK4003 15
PK4003 8
(NORMAL)
INPUT SW
(Rch)
(Lch)
MULTI Lch FREQ.
VR4551
QR4508
C4515
VR4502
Lch REC PB LEV.
VR4501
Lch FREQ.
REG 5V
EVR REF. V
P. OFF Ⓛ
P501-19 REC
120mVp-p (10μsec. div)
P501-17 PLAY
1.2Vp-p (10μsec. div)
IC551
P3001 2
P501 19
P3001 4
P501 17
REC AMP
P. B:ON
PRE AMP
VCA
SW
REC:ON
P502 9
P502 8
P502 10
HI-FI AUDIO HEAD L
HI-FI AUDIO HEAD R
AUDIO HEAD-R
AUDIO HEAD-L
FROM SYSTEM CTL
P3001 5
P501 16
A. H. SW
P3001 1
P501 20
FLY ERASE Ⓗ
Q501, Q502
AMP
P502 11
P502 12
FLYING ERASE HEAD
IC502
OSC
OUTPUT DRIVE
HEAD AMP C. B. A.
IC4501-97, 98 REC/PLAY
3.0Vp-p (0.2msec. div.)
IC4501-99 REC/PLAY
2.0Vp-p (0.2msec. div.)
02
L)
R)
N)
VR4512
EE LEVEL
NON SW 5V
A. H. SW
PK4003 13
FROM SYSTEM CTL
QR4003
(D. A. RECⒽ:ON)
EE/REC/PB CTL
PK4001 10
D. A. REC Ⓗ
QR4004
(A. DUBⒽ:ON)
A. DUB Ⓗ
FROM SYSTEM CTL
IC4501-27, 28 REC/PLAY
0.9Vp-p (0.2msec. div.)
EEⒽ/INSERTⓂ
PK4001 9
INSERT Ⓛ
V. EEⓁ
FROM VIDEO
POWER OFFⓁ
PK4001 1
QR4004
(POWER OFF Ⓗ:ON)
POWER OFF Ⓗ
FROM SYSTEM CTL
IC4501-42 PLAY
5.0Vp-p (10msec. div.)
Hi-Fi AUDIO PACK C. B. A.

CTL / VTR MODE	D. A REC (81 PIN)	EE (80 PIN)	AUDIO MODE	
			FM	NORMAL
STOP	H	H	EE	EE
REC	L	H	REC	REC
P. B	H	L	P. B	P. B
INSERT	H	M	REC	P. B
A. DUB	L	L	P. B	REC

SECTION 4
SCHEMATIC DIAGRAMS

4-1. POWER SCHEMATIC DIAGRAM

4-2. P


HOT
P1101
VJS3306
AC INLET
F1101
XBA2C16TH15
L1101
ELF18D221F
R1101
330K
C1101
1000P
C1105
0.15
C1102
1000P
L1102
ELF18D221F
C1106
0.15
D1102
S1WBA60S
C1107
400V120
L1103
VLP0083
L1104
VLP0083
C1113
0.1
D1108
ERA15-08V5
D1109
ERA15-08V5
C1114
35V47
R1115
10
D1104
MA178
L1106
VLP0083
C1103
1000P
R1105
3.9M
R1106
4.7M
D1110
RD100E
R1102
39K
C1109
0.01
C1108
120P
D1103
AP01CV2
T1101
ETE28K100BY
V2
V1
P1
P2
S7
S8
S3
S4
S6
S1
S2
S5
D1125
11EQS04
C1133
6V560
C1135
0.01
C1134
0.01
C1132
100P
D1124
MA185
L1124
100µ
C1130
35V150
C1131
0.01
C1123
100P
D1121
F5KF20B
L1121
22µ
C1121
25V2700
C1122
25V1000
C1129
100P
L1123
100µ
C1127
50V82
C1128
0.01
D1123
ERA22-02V5
P1102
1 UNREG -29V
2 HEATER (+)
3 HEATER (-)
4 FIP ON Ⓛ
5 UNREG 6V
6 GND
7 GND
8 UNREG 36V
9 UNREG 14V
10 GND (MOTOR)
11 GND (MOTOR)
TO LUMINANCE & CHROMINANCE SECTION P1001 (Page: 4-5/C-5)
T1101-P1 STOP
30Vp-p (2msec. div)
T1101-S4 STOP
32Vp-p (5µsec. div)
T1101-S2 STOP
80Vp-p (5µsec. div)
T1101-S5 STOP
220Vp-p (5µsec. div)
T1101-S6 STOP
150Vp-p (5µsec. div)
R1110
10K
D1106
MA4200H
R1114
2200
IC1101
STRM6559LF
16.6
START
O.V.P
REG
LATCH
DRIVE
T.S.D
TRIGER
O.S.C
O.C.P
-318.0
L1105
VLP0085
R1109
1500
R1111
560
R1112
330
R1113
0.82
0.4
1.2
IC1101-5 STOP
1.2Vp-p (5µsec. div)
IC1101-7 STOP
1.0Vp-p (5µsec. div)
IC1101-6 STOP
3.0Vp-p (5µsec. div)
IC1101-1 STOP
400Vp-p (5µsec. div)
IC1101-2 STOP
11Vp-p (5µsec. div)
IC1101-4 STOP
1.4Vp-p (5µsec. div)
Q1101
PC120FY
14.3
1.1
5.7
4.8
D1107
1SS254
C1112
8200P
R1121
22
R1122
220
C1126
100P
D1122
F5KQ40
L1122
22µ
C1124
10V3300
C1125
10V1000
D1126
MA4047M
D1127
MA4043L
3.2
47K
47K
0
QR1121
UN6213
(FIP OFF : ON)
R1108
100
R1107
220K
C1110
4V330
C1111
1000P
D1105
MA700
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

CAUTION THE RED MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SAME TYPE.

NOTE : THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE 1. WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT, SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE .... ⏚
SECONDARY SIDE ...... ⏚

NOTE 2. THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 230V.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-2. POWER C.B.A. (VEP01639A)

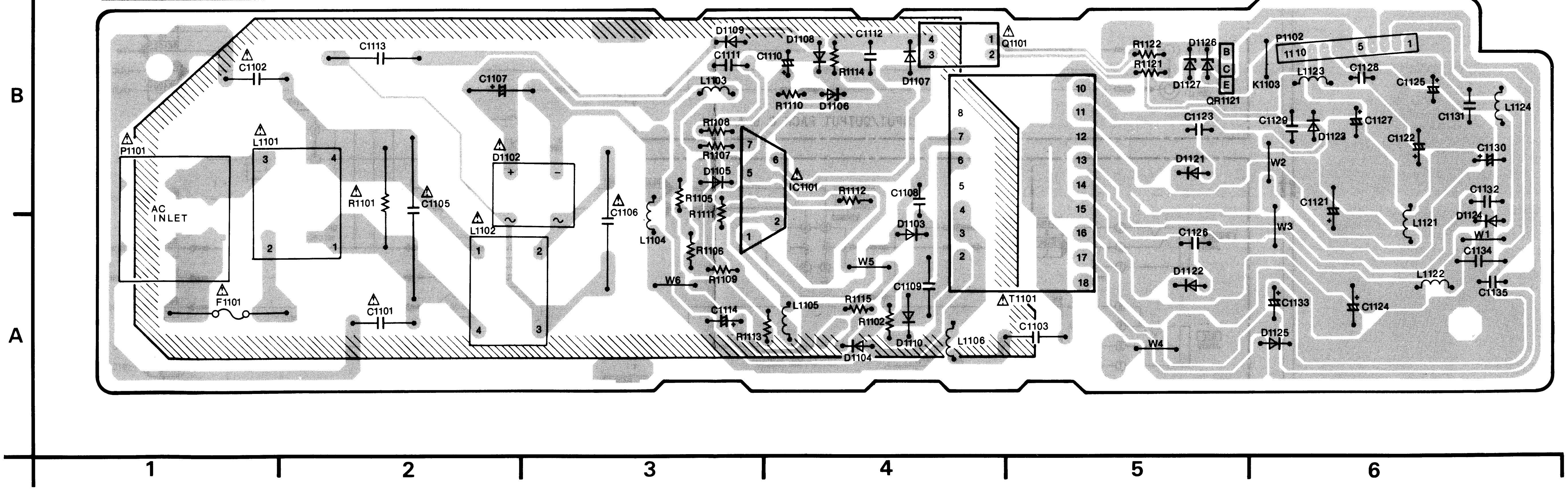
POWER C.B.A.	
Transistor	
Q1101	B-4
Transistor & Resistor	
QR1121	B-5
Integrated Circuit	
IC1101	A-3
Connector	
P1101 P1102	B-1 B-6

ADDRESS INFORMATION

P1102

1	UNREG −29V	TO LUMINANCE & CHROMINANCE SECTION P1001 (Page: 4-5/C-5)
2	HEATER (+)	
3	HEATER (−)	
4	FIP ON Ⓛ	
5	UNREG 6V	
6	GND	
7	GND	
8	UNREG 36V	
9	UNREG 14V	
10	GND (MOTOR)	
11	GND (MOTOR)	

CAUTION THE RED MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.


B
A
1
2
3
4
5
6
P1101
AC INLET
F1101
C1102
C1113
L1101
R1101
C1105
C1101
C1107
D1102
L1102
C1106
L1104
W6
D1109
C1111
C1110
D1108
R1114
C1112
D1107
Q1101
L1103
R1110
D1106
R1108
R1107
D1105
R1105
R1111
R1106
R1109
IC1101
R1112
C1108
D1103
W5
C1109
C1114
R1113
L1105
R1115
R1102
D1110
D1104
L1106
T1101
C1103
R1122
R1121
D1126
D1127
QR1121
B
C
E
K1103
P1102
1110
5
1
L1123
C1128
C1125
L1124
C1131
C1123
C1129
D1123
C1127
C1122
C1130
D1121
W2
C1132
C1121
D1124
W3
L1121
W1
C1126
C1134
D1122
L1122
C1135
C1133
C1124
D1125
W4

4—3

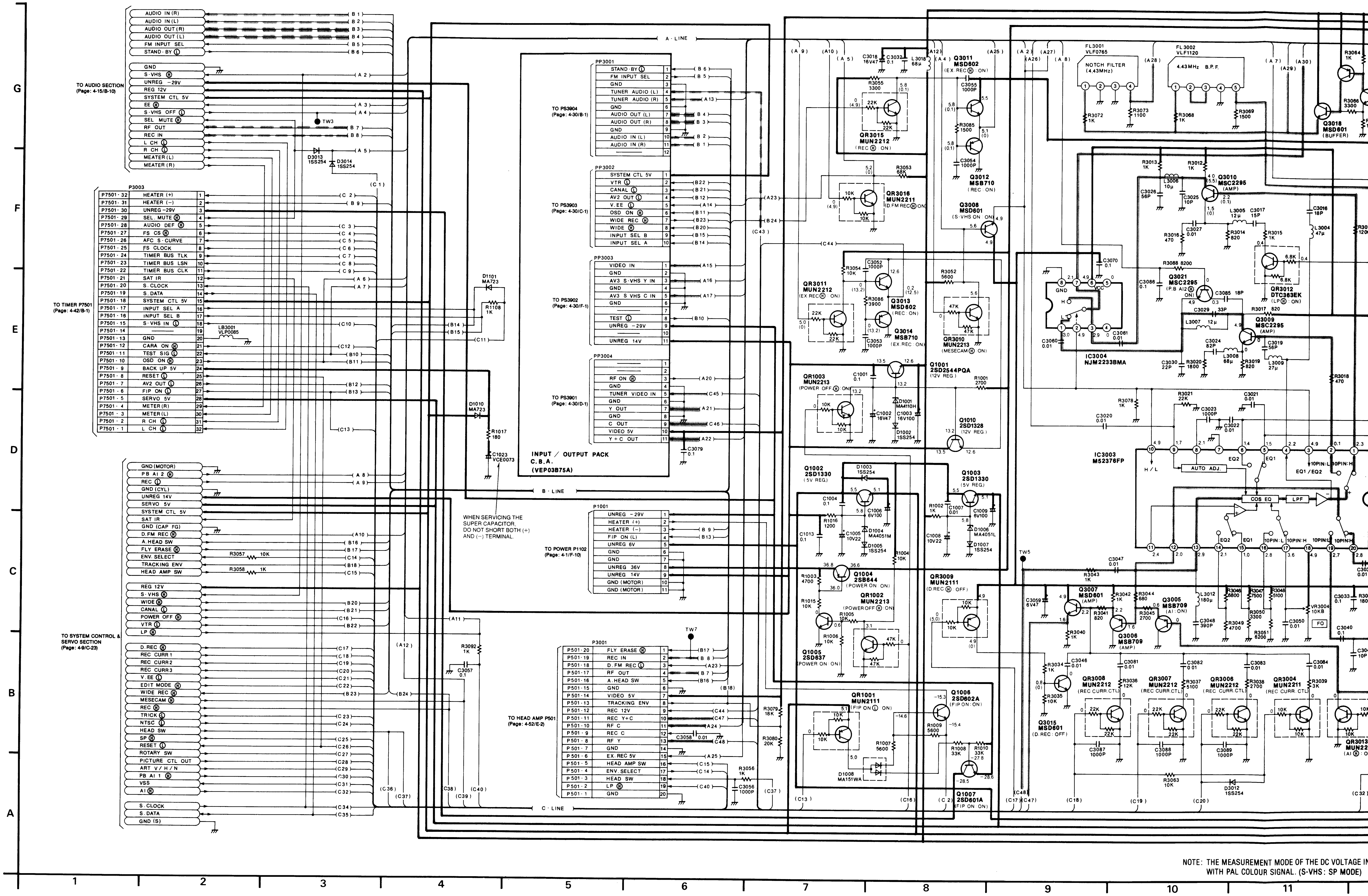
4—4

CIRCUIT TO DISTINGUISH
CUIT.
ECTRIC SHOCK DURING

UMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
RDER A PART, PLEASE REFER TO PARTS LIST.

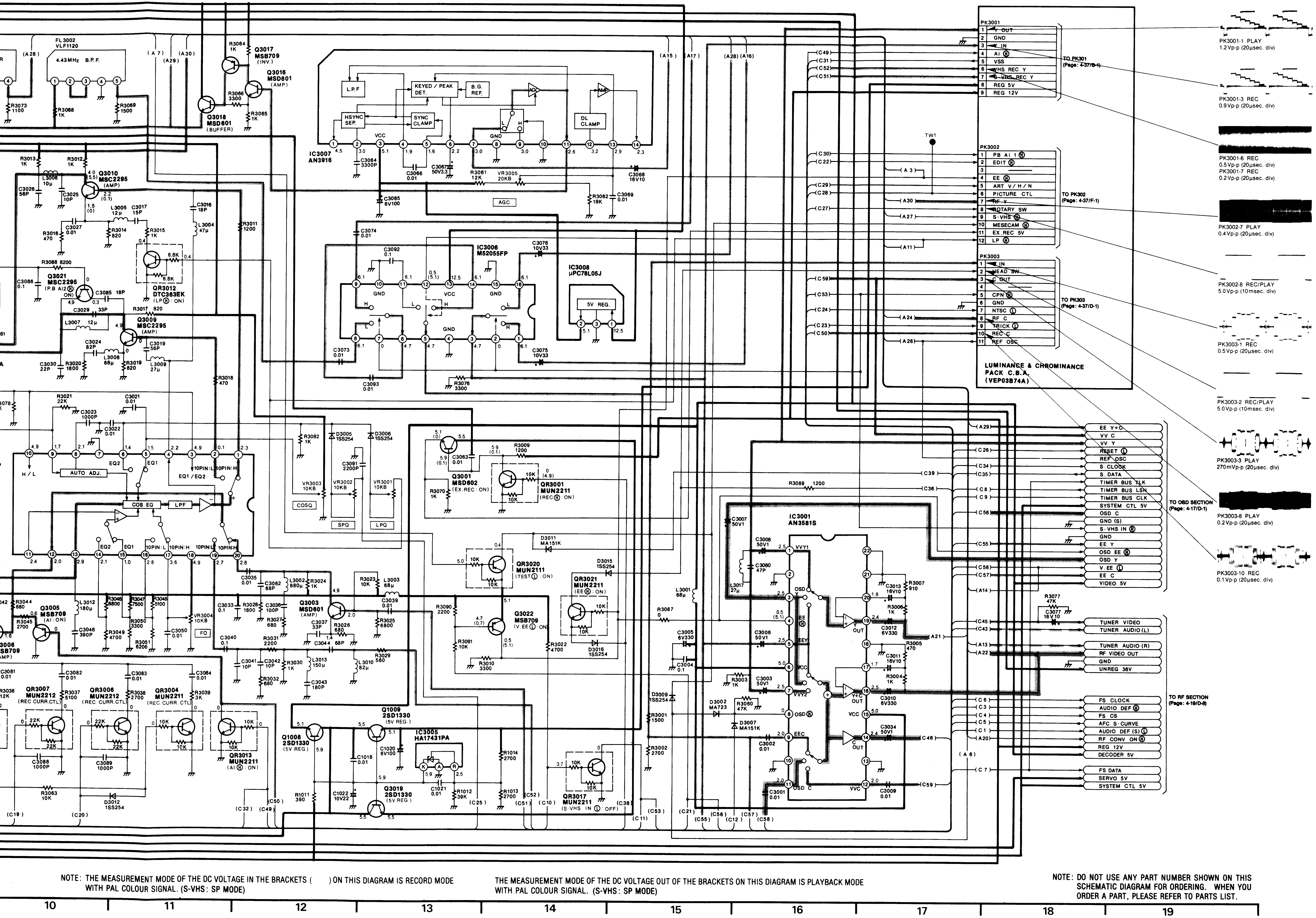
10

4-3. LUMINANCE & CHROMINANCE SECTION IN MAIN SCHEMATIC DIAGRAM


TO AUDIO SECTION (Page: 4-15/B-10)
AUDIO IN (R)
AUDIO IN (L)
AUDIO OUT (R)
AUDIO OUT (L)
FM INPUT SEL
STAND·BY Ⓛ
GND
S·VHS Ⓗ
UNREG −29V
REG 12V
SYSTEM CTL 5V
EE Ⓗ
S·VHS OFF Ⓛ
SEL MUTE Ⓗ
RF OUT
REC IN
L CH Ⓛ
R CH Ⓛ
METER (L)
METER (R)
TW3
D3013 1SS254
D3014 1SS254
A · LINE
B · LINE
C · LINE
TO TIMER P7501 (Page: 4-42/B-1)
P3003
HEATER (+)
HEATER (−)
UNREG −29V
SEL. MUTE Ⓗ
AUDIO DEF Ⓗ
FS CS Ⓗ
AFC S·CURVE
FS CLOCK
TIMER BUS TLK
TIMER BUS LSN
TIMER BUS CLK
SAT IR
S.CLOCK
S.DATA
SYSTEM CTL 5V
INPUT SEL A
INPUT SEL B
S·VHS IN Ⓛ
GND
CARA ON Ⓗ
TEST SIG Ⓛ
OSD ON Ⓗ
BACK UP 5V
RESET Ⓛ
AV2 OUT Ⓛ
FIP ON Ⓛ
SERVO 5V
METER (R)
METER (L)
R CH Ⓛ
L CH Ⓛ
LB3001 VLP0085
D1101 MA723
R1108 1K
D1010 MA723
R1017 180
C1023 VCE0073
WHEN SERVICING THE SUPER CAPACITOR, DO NOT SHORT BOTH (+) AND (−) TERMINAL.
TO PS3904 (Page: 4-30/B-1)
PP3001
STAND·BY Ⓛ
FM INPUT SEL
TUNER AUDIO (L)
TUNER AUDIO (R)
AUDIO OUT (L)
AUDIO OUT (R)
AUDIO IN (L)
AUDIO IN (R)
TO PS3903 (Page: 4-30/C-1)
PP3002
SYSTEM CTL 5V
VTR Ⓛ
CANAL Ⓛ
AV2 OUT Ⓛ
V.EE Ⓛ
OSD ON Ⓗ
WIDE REC Ⓗ
WIDE Ⓗ
INPUT SEL B
INPUT SEL A
TO PS3902 (Page: 4-30/F-1)
PP3003
VIDEO IN
AV3 S·VHS Y IN
AV3 S·VHS C IN
TEST Ⓛ
UNREG −29V
UNREG 14V
TO PS3901 (Page: 4-30/D-1)
PP3004
RF ON Ⓗ
TUNER VIDEO IN
Y OUT
C OUT
VIDEO 5V
Y+C OUT
C3079 0.1
INPUT / OUTPUT PACK C.B.A. (VEP03B75A)
TO POWER P1102 (Page: 4-1/F-10)
P1001
UNREG −29V
HEATER (+)
HEATER (−)
FIP ON (L)
UNREG 6V
UNREG 36V
UNREG 14V
GND (MOTOR)
TO SYSTEM CONTROL & SERVO SECTION (Page: 4-9/C-23)
GND (MOTOR)
PB AI 2 Ⓗ
REC Ⓛ
GND (CYL)
UNREG 14V
SERVO 5V
SYSTEM CTL 5V
SAT IR
GND (CAP FG)
D.FM REC Ⓗ
A.HEAD SW
FLY ERASE Ⓗ
ENV. SELECT
TRACKING ENV
HEAD AMP SW
R3057 10K
R3058 1K
REG 12V
S·VHS Ⓗ
WIDE Ⓗ
CANAL Ⓛ
POWER OFF Ⓗ
VTR Ⓛ
LP Ⓗ
D.REC Ⓗ
REC CURR 1
REC CURR 2
REC CURR 3
V.EE Ⓛ
EDIT MODE Ⓗ
WIDE REC Ⓗ
MESECAM Ⓗ
REC Ⓗ
TRICK Ⓛ
NTSC Ⓛ
HEAD SW
SP Ⓗ
RESET Ⓛ
ROTARY SW
PICTURE CTL OUT
ART V / H / N
PB AI 1 Ⓗ
VSS
AI Ⓗ
S.CLOCK
S.DATA
GND (S)
R3092 1K
C3057 0.1
TW7
TO HEAD AMP P501 (Page: 4-52/E-2)
P3001
FLY ERASE Ⓗ
REC IN
D.FM REC Ⓛ
RF OUT
A.HEAD SW
VIDEO 5V
TRACKING ENV
REC 12V
REC Y+C
RF C
REC C
RF Y
EX.REC 5V
HEAD AMP SW
ENV.SELECT
HEAD SW
LP Ⓗ
C3058 0.01
R3079 18K
R3080 20K
R3056 1K
C3056 1000P
QR3015 MUN2212 (REC Ⓗ ON)
R3055 3300
C3018 16V47
C3032 0.1
L3018 68μ
QR3016 MUN2211 (D.FM REC Ⓗ ON)
R3053 68K
QR3011 MUN2212 (EX REC Ⓗ ON)
R3054 10K
C3052 1000P
R3086 3900
Q3013 MSD602 (REC ON)
Q3014 MSB710 (EX.REC ON)
C3053 1000P
Q3011 MSD602 (EX.REC Ⓗ ON)
C3055 1000P
R3085 1500
C3054 1000P
Q3012 MSB710 (REC ON)
Q3008 MSD601 (S·VHS ON)
R3052 5600
QR3010 MUN2213 (MESECAM Ⓗ ON)
Q1001 2SD2544PQA (12V REG.)
R1001 2700
QR1003 MUN2213 (POWER OFF Ⓗ ON)
C1001 0.1
D1001 MA4110H
C1002 16V47
C1003 16V100
D1002 1SS254
Q1010 2SD1328 (12V REG.)
Q1002 2SD1330 (5V REG.)
D1003 1SS254
Q1003 2SD1330 (5V REG.)
C1004 0.1
R1016 1200
C1006 6V100
C1005 10V22
D1004 MA4051M
D1005 1SS254
R1002 1K
C1007 0.01
C1009 6V100
D1006 MA4051L
C1008 10V22
D1007 1SS254
C1013 0.1
R1004 10K
Q1004 2SB644 (POWER ON ON)
QR1002 MUN2213 (POWER OFF Ⓗ ON)
R1003 4700
R1015 10K
R1005 10K
R1006 10K
Q1005 2SD637 (POWER ON ON)
QR3009 MUN2111 (D.REC Ⓗ OFF)
QR1001 MUN2111 (FIP ON Ⓛ ON)
R1007 5600
D1008 MA151WA
Q1006 2SD602A (FIP ON ON)
R1009 5600
R1008 33K
R1010 33K
Q1007 2SD601A (FIP ON ON)
TW5
FL3001 VLF0765
NOTCH FILTER (4.43MHz)
FL3002 VLF1120
4.43MHz B.P.F.
R3072 1K
R3073 1100
R3068 1K
R3069 1500
Q3018 MSD601 (BUFFER)
R3064 1K
R3066
R3013 1K
R3012 1K
L3006 10μ
C3026 56P
C3025 10P
Q3010 MSC2295 (AMP)
L3005 12μ
C3017 15P
C3016 18P
L3004 47μ
R3016 470
C3027 0.01
R3014 820
R3015 1K
C3070 0.1
R3088 8200
C3086 0.1
Q3021 MSC2295 (P.B AI2 Ⓗ ON)
C3085 18P
QR3012 DTC363EK (LP Ⓗ ON)
C3029 33P
R3017 820
L3007 12μ
Q3009 MSC2295 (AMP)
C3024 82P
L3008 68μ
C3019 56P
R3019 820
L3009 27μ
C3030 22P
R3020 1800
C3060 0.01
C3061 0.01
IC3004 NJM2233BMA
R3018 470
R3021 22K
C3021 0.01
R3078 1K
C3023 1000P
C3022 0.01
C3020 0.01
IC3003 M52376FP
H / L
AUTO ADJ.
EQ2
EQ1
EQ1 / EQ2
10PIN:L
10PIN:H
COS EQ
LPF
C3047 0.01
R3043 1K
Q3007 MSD601 (AMP)
R3042 1K
R3044 680
Q3005 MSB709 (AI : ON)
C3059 6V47
R3041 820
R3045 2700
R3040 1K
Q3006 MSB709 (AMP)
L3012 180μ
C3048 390P
R3046 6800
R3047 7500
R3048 5100
R3049 4700
R3050 3300
R3051 6200
VR3004 10KB
C3050 0.01
FO
C3033
C3040 0.1
R3034 1K
C3046 0.01
R3035 10K
Q3015 MSD601 (D.REC : OFF)
QR3008 MUN2212 (REC CURR CTL)
R3036 12K
C3081 0.01
QR3007 MUN2212 (REC CURR CTL)
R3037 5100
C3082 0.01
QR3006 MUN2212 (REC CURR CTL)
R3038 2700
C3083 0.01
QR3004 MUN2211 (REC CURR CTL)
R3039 3K
C3084 0.01
C3087 1000P
C3088 1000P
C3089 1000P
R3063 10K
D3012 1SS254
QR3013 MUN22
(AI Ⓗ : O
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE I
WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

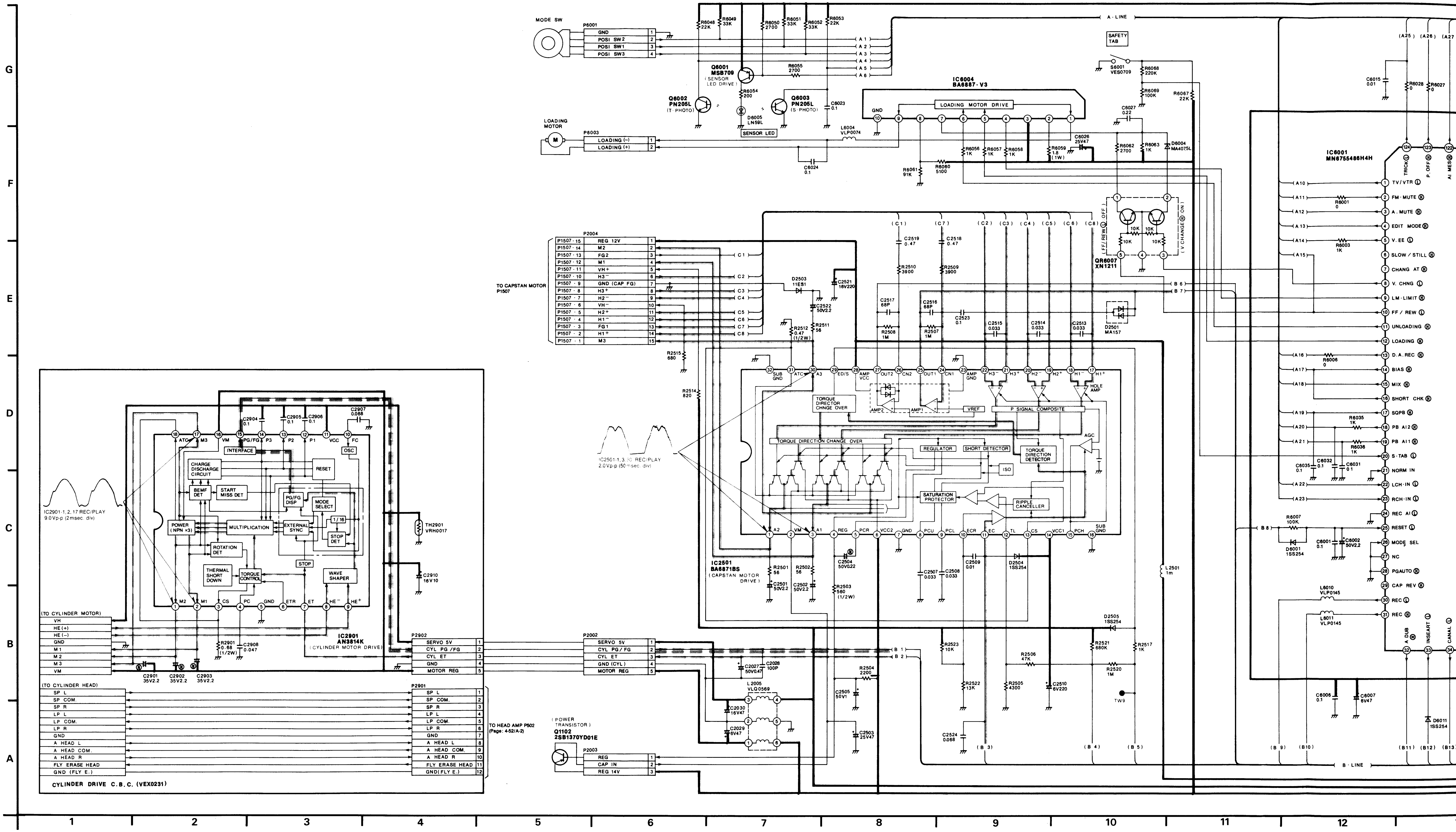

FL3002 VLF1120
4.43MHz B.P.F.
Q3017 MSB709 (INV.)
Q3016 MSD601 (AMP)
Q3018 MSD601 (BUFFER)
IC3007 AN3916
L.P.F
KEYED / PEAK DET.
B.G. REF.
AGC
HSYNC SEP.
SYNC CLAMP
DL CLAMP
VR3005 20KB
IC3006 M52055FP
IC3008 μPC78L05J
5V REG.
Q3010 MSC2295 (AMP)
Q3021 MSC2295 (P.B AI2 Ⓡ ON)
QR3012 DTC363EK (LP Ⓡ : ON)
Q3009 MSC2295 (AMP)
AUTO ADJ.
EQ1 / EQ2
COS EQ
LPF
COSQ
SPQ
LPQ
Q3001 MSD602 (EX.REC : ON)
QR3001 MUN2211 (REC Ⓡ : ON)
QR3020 MUN2111 (TEST Ⓛ : ON)
QR3021 MUN2211 (EE Ⓡ : ON)
Q3022 MSB709 (V.EE Ⓛ : ON)
Q3005 MSB709 (AI : ON)
Q3003 MSD601 (AMP)
Q3006 MSB709 (AMP)
QR3007 MUN2212 (REC CURR.CTL)
QR3006 MUN2212 (REC CURR.CTL)
QR3004 MUN2211 (REC CURR.CTL)
QR3013 MUN2211 (AI Ⓡ : ON)
Q1008 2SD1330 (5V REG.)
Q1009 2SD1330 (5V REG.)
IC3005 HA17431PA
Q3019 2SD1330 (5V REG.)
QR3017 MUN2211 (S-VHS IN Ⓛ : OFF)
IC3001 AN3581S
PK3001
Y OUT
GND
IN
AI Ⓡ
VSS
VHS REC Y
S-VHS REC Y
REG 5V
REG 12V
TO PK301 (Page: 4-37/B-1)
PK3002
PB AI 1 Ⓡ
EDIT Ⓡ
EE Ⓡ
ART V/H/N
PICTURE CTL
RF Y
ROTARY SW
S-VHS Ⓡ
MESECAM Ⓡ
EX.REC 5V
LP Ⓡ
TO PK302 (Page: 4-37/F-1)
PK3003
IN
HEAD SW
C OUT
CPN Ⓡ
GND
NTSC Ⓛ
RF C
TRICK Ⓛ
REC C
REF OSC
TO PK303 (Page: 4-37/D-1)
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03B74A)
TW1
EE Y+C
VV C
VV Y
RESET Ⓛ
REF OSC
S. CLOCK
S. DATA
TIMER BUS TLK
TIMER BUS LSK
TIMER BUS CLK
SYSTEM CTL 5V
OSD C
GND (S)
S-VHS IN Ⓡ
GND
EE Y
OSD EE Ⓡ
OSD Y
V. EE Ⓛ
EE C
VIDEO 5V
TO OSD SECTION (Page: 4-17/D-1)
TUNER VIDEO
TUNER AUDIO (L)
TUNER AUDIO (R)
RF VIDEO OUT
GND
UNREG 38V
FS CLOCK
AUDIO DEF Ⓡ
FS CS
AFC S-CURVE
AUDIO DEF (S) Ⓛ
RF CONV ON Ⓡ
REG 12V
DECODER 5V
FS DATA
SERVO 5V
SYSTEM CTL 5V
TO RF SECTION (Page: 4-19/D-8)
PK3001-1 PLAY 1.2Vp-p (20μsec. div)
PK3001-3 REC 0.9Vp-p (20μsec. div)
PK3001-6 REC 0.5Vp-p (20μsec. div)
PK3001-7 REC 0.2Vp-p (20μsec. div)
PK3002-7 PLAY 0.4Vp-p (20μsec. div)
PK3002-8 REC/PLAY 5.0Vp-p (10msec. div)
PK3003-1 REC 0.5Vp-p (20μsec. div)
PK3003-2 REC/PLAY 5.0Vp-p (10msec. div)
PK3003-3 PLAY 270mVp-p (20μsec. div)
PK3003-8 PLAY 0.2Vp-p (20μsec. div)
PK3003-10 REC 0.1Vp-p (20μsec. div)
10
11
12
13
14
15
16
17
18
19

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

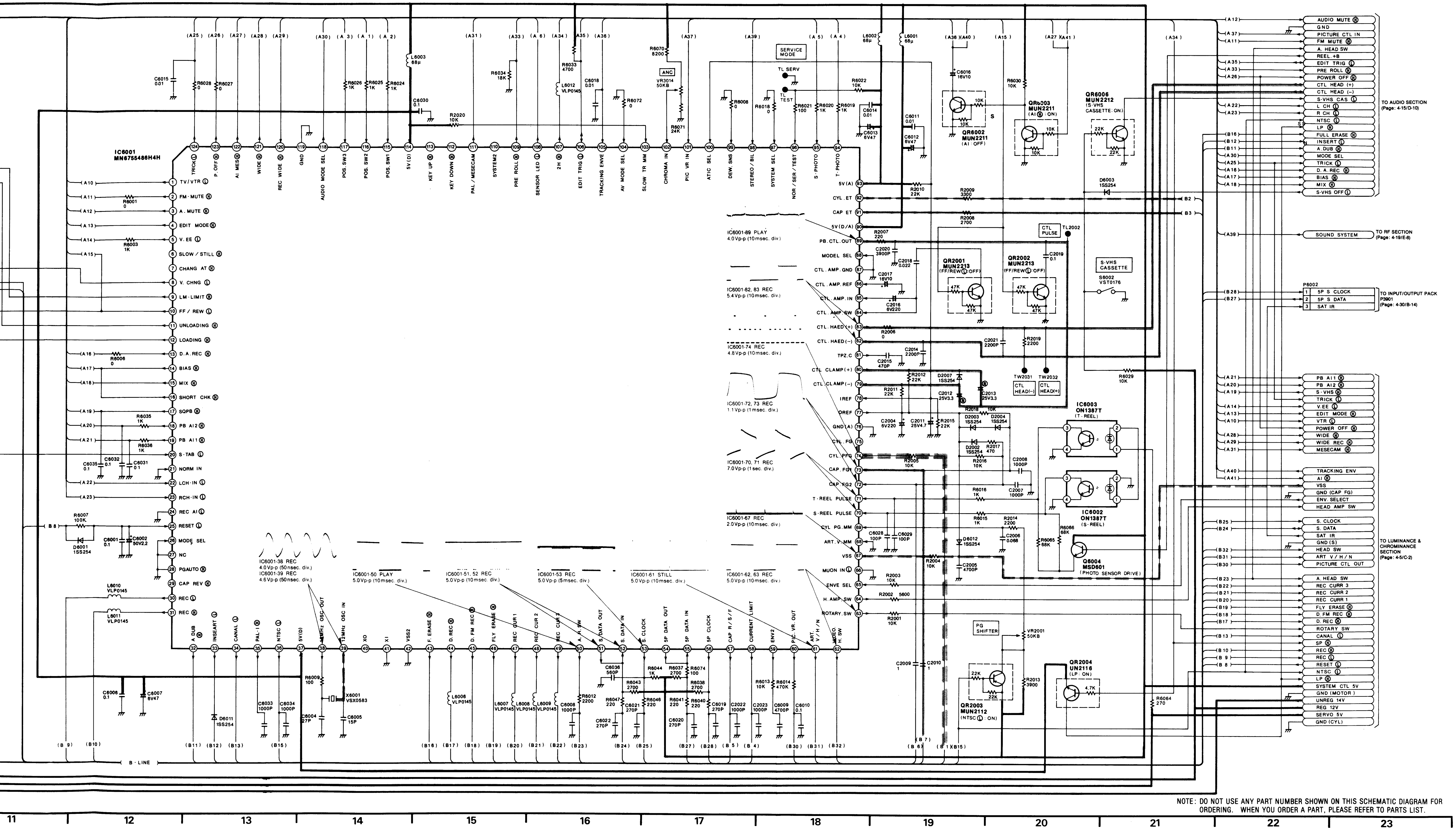
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-4. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM


G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
MODE SW
P6001
GND
POSI SW2
POSI SW1
POSI SW3
LOADING MOTOR
P6003
LOADING (−)
LOADING (+)
Q6001
MSB709
(SENSOR LED DRIVE)
Q6002
PN205L
(T-PHOTO)
Q6003
PN205L
(S-PHOTO)
D6005
LN59L
SENSOR LED
R6048 22K
R6049 33K
R6050 2700
R6051 33K
R6052 33K
R6053 22K
R6055 2700
R6054 200
C6023 0.1
C6024 0.1
L6004 VLP0074
IC6004
BA6887-V3
LOADING MOTOR DRIVE
R6056 1K
R6057 1K
R6058 1K
R6059 1.8 (1W)
R6060 5100
R6061 91K
R6062 2700
R6063 1K
C6026 25V47
D6004 MA4075L
C6027 0.22
R6068 220K
R6069 100K
R6067 22K
S6001 VES0709
SAFETY TAB
A-LINE
B-LINE
IC6001
MN6755486H4H
TV/VTR
FM·MUTE
A.MUTE
EDIT MODE
V.EE
SLOW/STILL
CHANG AT
V.CHNG
LM-LIMIT
FF/REW
UNLOADING
LOADING
D.A.REC
BIAS
MIX
SHORT CHK
SQPB
PB AI2
PB AI1
S-TAB
NORM IN
LCH-IN
RCH-IN
REC AI
RESET
MODE SEL
NC
PGAUTO
CAP REV
REC
REC
TRICK
P.OFF
AI MES
A DUB
INSEART
CANAL
QR6007
XN1211
(FF/REW OFF)
(V CHANGE ON)
R6001 0
R6003 1K
R6006 0
R6035 1K
R6036 1K
R6007 100K
D6001 1SS254
C6001 0.1
C6002 50V2.2
C6031 0.1
C6032 0.1
C6035 0.1
C6006 0.1
C6007 6V47
C6015 0.01
R6028 0
R6027 0
L6010 VLP0145
L6011 VLP0145
D6011 1SS254
P2004
TO CAPSTAN MOTOR P1507
REG 12V
M2
FG2
M1
VH+
H3−
GND (CAP FG)
H3+
H2−
VH−
H2+
H1−
FG1
H1+
M3
IC2501
BA6871BS
(CAPSTAN MOTOR DRIVE)
TORQUE DIRECTOR CHNGE OVER
TORQUE DIRECTION CHANGE OVER
REGULATOR
SHORT DETECTOR
TORQUE DIRECTION DETECTOR
SATURATION PROTECTOR
RIPPLE CANCELLER
P SIGNAL COMPOSITE
VREF
AGC
HOLE AMP
ISO
IC2501-1,3,30 REC/PLAY
2.0Vp-p (50msec. div)
D2501 MA157
D2503 11ES1
D2504 1SS254
D2505 1SS254
L2501 1m
L2005 VLQ0569
TW9
IC2901
AN3814K
(CYLINDER MOTOR DRIVE)
CHARGE DISCHARGE CIRCUIT
BEMF DET
START MISS DET
RESET
INTERFACE
OSC
PG/FG DISP
MODE SELECT
POWER (NPN ×3)
MULTIPLICATION
EXTERNAL SYNC
1/16
STOP DET
ROTATION DET
THERMAL SHORT DOWN
TORQUE CONTROL
STOP
WAVE SHAPER
IC2901-1,2,17 REC/PLAY
9.0Vp-p (2msec. div)
TH2901 VRH0017
C2910 16V10
R2901 0.68 (1/2W)
C2908 0.047
C2901 35V2.2
C2902 35V2.2
C2903 35V2.2
(TO CYLINDER MOTOR)
VH
HE(+)
HE(−)
GND
M1
M2
M3
VM
(TO CYLINDER HEAD)
SP L
SP COM.
SP R
LP L
LP COM.
LP R
GND
A HEAD L
A HEAD COM.
A HEAD R
FLY ERASE HEAD
GND (FLY E.)
CYLINDER DRIVE C.B.C. (VEX0231)
P2902
SERVO 5V
CYL PG/FG
CYL ET
GND
MOTOR REG
P2901
TO HEAD AMP P502 (Page: 4-52/A-2)
P2002
GND (CYL)
(POWER TRANSISTOR)
Q1102
2SB1370YD01E
P2003
REG
CAP IN
REG 14V

CAPSTAN SERVO SPEED LOOP — CAPSTAN SERVO PHASE LOOP — CYLINDER SERVO SPEED LOOP — CYLINDER SERVO PHASE LOOP


IC6001
MN6755486H4H
TV/VTR Ⓛ
FM·MUTE Ⓗ
A. MUTE Ⓗ
EDIT MODE Ⓗ
V. EE Ⓛ
SLOW / STILL Ⓗ
CHANG AT Ⓗ
V. CHNG Ⓛ
LM·LIMIT Ⓗ
FF / REW Ⓛ
UNLOADING Ⓗ
LOADING Ⓗ
D. A. REC Ⓗ
BIAS Ⓗ
MIX Ⓗ
SHORT CHK Ⓗ
SQPB Ⓗ
PB AI2 Ⓗ
PB AI1 Ⓗ
S-TAB Ⓛ
NORM IN
LCH-IN Ⓛ
RCH-IN Ⓛ
REC AI Ⓛ
RESET Ⓛ
MODE SEL
NC
PGAUTO Ⓗ
CAP REV Ⓗ
REC Ⓛ
REC Ⓗ
TRICK Ⓛ
P. OFF Ⓗ
AI MES Ⓗ
WIDE Ⓗ
REC WIDE Ⓗ
GND
AUDIO MODE SEL
POS. SW3
POS. SW2
POS. SW1
5V (D)
KEY UP Ⓗ
KEY DOWN Ⓗ
PAL / MESECAM
SYSTEM2
PRE ROLL Ⓗ
SENSOR LED Ⓛ
2H Ⓗ
EDIT TRIG Ⓛ
TRACKING ENVE
AV MODE SEL
SLOW TR MM
CHROMA IN
PIC VR IN
ATIC SEL
DEW SNS
STEREO / BIL
SYSTEM SEL
NOR / SER / TEST
S-PHOTO
T-PHOTO
5V (A)
CYL. ET
CAP ET
5V (D/A)
PB. CTL. OUT
MODEL SEL
CTL. AMP. GND
CTL. AMP. REF
CTL. AMP. IN
CTL. AMP. SW
CTL. HAED (+)
CTL. HAED (−)
TPZ. C
CTL CLAMP (+)
CTL CLAMP (−)
IREF
OREF
GND (A)
CTL. FG
CYL. PFG
CAP. FG1
CAP FG2
T-REEL PULSE
S-REEL PULSE
CYL PG. MM
ART. V. MM
VSS
MUON IN Ⓛ
ENVE SEL
H. AMP SW
ROTARY. SW
A. DUB Ⓗ
INSEART Ⓛ
CANAL Ⓛ
PAL-I Ⓗ
NTSC Ⓛ
5V (D)
4MHz OSC OUT
12MHz OSC IN
XO
XI
VSS2
F. ERASE Ⓗ
D. REC Ⓗ
D. FM REC Ⓗ
FLY ERASE Ⓗ
REC CUR 1
REC CUR 2
REC CUR 3
A. H. SW
S. DATA OUT
S. DATA IN
S. CLOCK
SP DATA OUT
SP DATA IN
SP CLOCK
CAP R/S/F
CURRENT LIMIT
ENV2
PIC. VR. OUT
ART. V/H/N
VIDEO H. SW
IC6001-89 PLAY 4.0Vp-p (10msec. div.)
IC6001-82, 83 REC 5.4Vp-p (10msec. div.)
IC6001-74 REC 4.8Vp-p (10msec. div.)
IC6001-72, 73 REC 1.1Vp-p (1msec. div.)
IC6001-70, 71 REC 7.0Vp-p (1sec. div.)
IC6001-67 REC 2.0Vp-p (10msec. div.)
IC6001-38 REC 4.0Vp-p (50nsec. div.)
IC6001-39 REC 4.6Vp-p (50nsec. div.)
IC6001-50 PLAY 5.0Vp-p (10msec. div.)
IC6001-51, 52 REC 5.0Vp-p (10msec. div.)
IC6001-53 REC 5.0Vp-p (5msec. div.)
IC6001-61 STILL 5.0Vp-p (10msec. div.)
IC6001-62, 63 REC 5.0Vp-p (10msec. div.)
SERVICE MODE
TL SERV
TL TEST
ANC
VR3014 50KB
QR6002 MUN2211 (AI OFF)
QR6003 MUN2211 (AI Ⓗ : ON)
QR6006 MUN2212 (S-VHS CASSETTE : ON)
QR2001 MUN2213 (FF/REW Ⓛ : OFF)
QR2002 MUN2213 (FF/REW Ⓛ : OFF)
CTL PULSE
TL2002
S-VHS CASSETTE
S6002 VST0176
TW2031
TW2032
CTL HEAD (−)
CTL HEAD (+)
IC6003 ON1387T (T-REEL)
IC6002 ON1387T (S-REEL)
Q6004 MSD601 (PHOTO SENSOR DRIVE)
PG SHIFTER
VR2001 50KB
QR2003 MUN2112 (NTSC Ⓛ : ON)
QR2004 UN2116 (LP : ON)
X6001 VSX0583
B-LINE
AUDIO MUTE Ⓗ
GND
PICTURE CTL IN
FM MUTE Ⓗ
A. HEAD SW
REEL +B
EDIT TRIG Ⓛ
PRE ROLL Ⓗ
POWER OFF Ⓗ
CTL HEAD (+)
CTL HEAD (−)
S-VHS CAS Ⓛ
L CH Ⓛ
R CH Ⓛ
NTSC Ⓛ
LP Ⓗ
FULL ERASE Ⓗ
INSERT Ⓛ
A. DUB Ⓗ
MODE SEL
TRICK Ⓛ
D. A. REC Ⓗ
BIAS Ⓗ
MIX Ⓗ
S-VHS OFF Ⓛ
TO AUDIO SECTION (Page: 4-15/D-10)
SOUND SYSTEM
TO RF SECTION (Page: 4-19/E-8)
P6002
1 SP S CLOCK
2 SP S DATA
3 SAT IR
TO INPUT/OUTPUT PACK P3901 (Page: 4-30/B-14)
PB AI1 Ⓗ
PB AI2 Ⓗ
S-VHS Ⓗ
TRICK Ⓛ
V.EE Ⓛ
EDIT MODE Ⓗ
VTR Ⓛ
POWER OFF Ⓗ
WIDE Ⓗ
WIDE REC Ⓗ
MESECAM Ⓗ
TRACKING ENV
AI Ⓗ
VSS
GND (CAP FG)
ENV. SELECT
HEAD AMP SW
S. CLOCK
S. DATA
SAT IR
GND (S)
HEAD SW
ART V / H / N
PICTURE CTL OUT
A. HEAD SW
REC CURR 3
REC CURR 2
REC CURR 1
FLY ERASE Ⓗ
D. FM REC Ⓗ
D. REC Ⓗ
ROTARY SW
CANAL Ⓛ
SP Ⓗ
REC Ⓗ
REC Ⓛ
RESET Ⓛ
NTSC Ⓛ
LP Ⓗ
SYSTEM CTL 5V
GND (MOTOR)
UNREG 14V
REG 12V
SERVO 5V
GND (CYL)
TO LUMINANCE & CHROMINANCE SECTION (Page: 4-5/C-2)
11
12
13
14
15
16
17
18
19
20
21
22
23

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (S-VHS: SP MODE)

REF. NO.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.5	4.5	0.5	13.8	0	14.4	−0.1	4.6	2.0	2.9	1.4	−0.1	−0.1	5.1	1.4	−0.1	2.3	2.3	2.3	2.3
PLAY	1.5	4.5	1.5	13.0	1.8	14.3	−0.1	0.6	0.6	2.9	2.6	0.4	0	5.1	1.4	−0.1	2.3	2.3	2.3	2.3
REC	1.6	4.5	1.6	13.0	1.9	14.2	−0.1	0.6	0.6	2.9	2.6	0.4	0	5.1	1.4	−0.1	2.3	2.3	2.3	2.3
F.F	6.8	14.1	6.9	5.7	12.3	14.2	−0.1	0.6	0.7	2.9	2.4	0.4	0.1	5.1	1.4	−0.1	2.3	2.3	2.3	2.3
REW	6.9	14.2	6.9	7.0	12.4	14.3	−0.1	0.6	0.6	2.9	2.5	0.4	0	5.1	1.4	−0.1	2.3	2.3	2.3	2.3

REF. NO.	IC2501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
STOP	2.3	2.3	0	6.3	6.2	6.3	6.2	12.3	2.0	0.5	−0.1	−0.1								
PLAY	2.3	2.3	0	6.3	6.2	6.3	6.3	12.3	0	1.6	0	−0.1								
REC	2.3	2.3	0	6.3	6.2	6.3	6.3	12.3	0	1.6	0	−0.1								
F.F	2.3	2.3	0	6.3	6.2	6.3	6.3	12.3	0	6.8	0.1	−0.1								
REW	2.3	2.3	0	6.3	6.2	6.3	6.3	12.3	5.0	6.5	0	−0.1								

REF. NO.	IC2901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
STOP	13.1	13.1	0.1	0.6	0	2.5	2.4	2.6	2.5	2.6	4.9	3.7	3.6	3.7	1.3	13.8	13.3	0.1		
PLAY	13.8	12.8	0.2	0.6	0	2.5	2.4	2.6	2.5	2.7	4.9	3.7	3.7	3.7	1.4	13.6	13.7	0.2		
REC	13.7	13.7	0.2	0.6	0	2.5	2.4	2.6	2.5	2.7	4.9	3.8	3.7	3.7	1.5	13.6	13.7	0.2		
F.F	13.8	13.8	0.1	0.6	0	2.5	2.4	2.6	2.5	2.7	4.9	3.8	3.7	3.7	1.5	13.5	13.7	0.1		
REW	13.8	13.8	0.2	0.6	0	2.5	2.4	2.6	2.5	2.7	4.9	3.7	3.7	3.7	1.5	13.5	13.7	0.2		

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.0	0	0	0	0	0	5.0	4.9	0	4.9	0	0	0	0	0	0	4.9	5.0	0	0.1
PLAY	0	0	0	0	4.9	0	5.0	4.9	0	4.9	0	0	0	0	0	0	4.9	0	4.9	0.1
REC	4.9	0	0	0	0	0	5.0	4.9	0	4.9	0	0	5.0	5.0	0	4.9	4.9	0	4.9	0.1
F.F	5.0	0	0	0	0	0	5.0	0	0	0	0	0	0	0	0	0	4.9	5.0	0	0.1
REW	5.1	0	0	0	0	0	5.0	0	0	0	0	0	0	0	0	0	4.9	5.0	0	0.1

REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	5.0	0	0	0	0	5.0	0	0	5.0	5.0	5.0	5.0	5.0	2.6	2.6	4.5
PLAY	0	0	0	0	5.0	0	0	0	0	5.0	0	0	5.0	5.0	5.0	5.0	5.0	–	–	4.5
REC	0	0	0	0	5.0	0	0	0	0	0	4.9	0	5.0	5.0	5.0	5.0	5.0	–	–	4.5
F.F	0	0	0	0	5.0	0	0	0	0	5.0	0	0	5.0	5.0	5.0	5.0	5.0	–	–	4.5
REW	0	0	0	0	5.0	0	0	0	5.0	5.0	0	0	5.0	5.0	5.0	5.0	5.0	–	–	4.5

REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	0	0	0	0	0	0	4.7	4.7	4.5	4.9	4.9	4.9	2.0	0	5.0	3.8
PLAY	0	0	0	0	0	0	0	0	0	2.5	4.7	4.7	4.5	4.9	4.9	4.9	0	5.0	0	3.0
REC	0	0	4.9	5.0	4.9	0	0	4.9	0	0	4.7	4.7	4.5	4.9	4.9	4.9	0	5.0	5.0	2.5
F.F	0	0	0	0	0	0	0	0	0	0	4.7	4.7	4.5	4.9	4.9	4.9	0	5.0	5.0	3.8
REW	0	0	0	0	0	0	0	0	0	0	4.7	4.7	4.5	4.9	4.9	4.9	5.0	5.0	5.0	3.8

REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	2.5	0	0	1.9	0	2.4	0	3.4	5.0	0.1	2.5	2.5	1.1	2.5	0	2.5	2.5	2.4	2.6
PLAY	0	2.5	2.5	0	4.1	0	2.4	0	3.4	5.0	3.9	2.4	2.5	1.1	2.5	0	2.5	2.5	2.5	2.5
REC	0	2.5	2.5	0	4.7	0	2.4	0	3.4	5.0	4.5	2.4	2.5	1.1	2.5	0	2.5	2.5	2.3	2.6
F.F	0	2.5	0	0	2.4	0	2.4	0	3.4	2.3	2.3	2.4	2.5	1.1	2.5	0	2.5	2.5	2.7	2.3
REW	0	2.5	0	0	2.5	0	2.4	0	3.4	2.2	2.3	2.4	2.5	1.1	2.5	0	2.5	2.5	2.7	2.3

REF. NO.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	5.0	0	0	0	2.5	2.5	0	0	2.5	5.0	1.4	4.7	5.0	5.0	5.0	5.0	0	5.1	0	2.5
PLAY	4.9	0	0	0	2.5	2.5	0	0	2.5	5.0	2.6	2.5	5.0	5.0	5.0	5.0	0	5.1	0	2.5
REC	4.9	2.4	2.9	0	2.5	2.4	0	0	2.5	5.0	2.6	2.5	5.0	5.0	5.0	4.9	0	5.1	0	2.5
F.F	4.9	0	0	0	2.5	2.5	0	0	2.5	5.0	2.4	2.5	5.0	5.0	5.0	5.0	0	5.1	0	2.5
REW	4.9	0	0	0	2.5	2.5	0	0	2.4	5.0	2.6	2.5	5.0	5.0	5.0	5.0	0	5.1	0	2.5

REF. NO.	IC6001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	2.5	0	5.0	0	0.3	5.1	4.8	5.0	0	0	0	0.6	0.6	5.0	5.1	0	5.1	5.0	0	0
PLAY	2.5	3.8	5.0	0	3.2	5.1	4.8	0.1	0	0	0	0.4	0.4	5.0	0	0	5.0	5.0	0	0
REC	2.5	3.8	5.0	0	0.4	5.1	4.8	0	0	0	0	0	0.6	5.0	0	0	5.0	5.0	0	0
F.F	2.5	3.8	5.0	0	1.8	5.1	4.8	0.1	0	0	0	2.3	2.3	5.0	0	5.0	5.1	5.0	0	0
REW	2.5	3.8	5.0	0	2.6	5.1	4.8	0.1	0	0	0	1.5	1.5	5.0	0	5.1	5.1	5.0	0	0

REF. NO.	IC6001																			
MODE	121	122	123	124																
STOP	0	0	0	5.0																
PLAY	0	0	0	5.0																
REC	0	0	0	5.0																
F.F	0	0	0	5.0																
REW	0	0	0	5.0																

REF. NO.	IC6002										IC6003									
MODE	1	2	3	4							1	2	3	4						
STOP	1.1	0	5.0	0							2.3	1.1	0.1	0						
PLAY	1.1	0	5.0	0							2.3	1.1	4.2	0						
REC	1.1	0	5.0	0							2.3	1.1	4.6	0						
F.F	1.1	0	2.3	0							2.3	1.1	2.3	0						
REW	1.1	0	2.3	0							2.3	1.1	2.3	0						

REF. NO.	IC6004																			
MODE	1	2	3	4	5	6	7	8	9	10										
STOP	0.2	14.5	14.5	0	0	0	7.3	9.4	0.2	−0.1										
PLAY	0.4	14.3	14.3	0	0	0	7.2	9.2	0.4	−0.1										
REC	1.0	14.2	14.2	0	0	0	7.3	9.2	1.2	−0.1										
F.F	1.3	14.2	14.2	0	0	0	14.2	9.2	1.4	−0.1										
REW	0.2	14.3	14.3	0	0	0	14.3	9.2	0.2	−0.1										

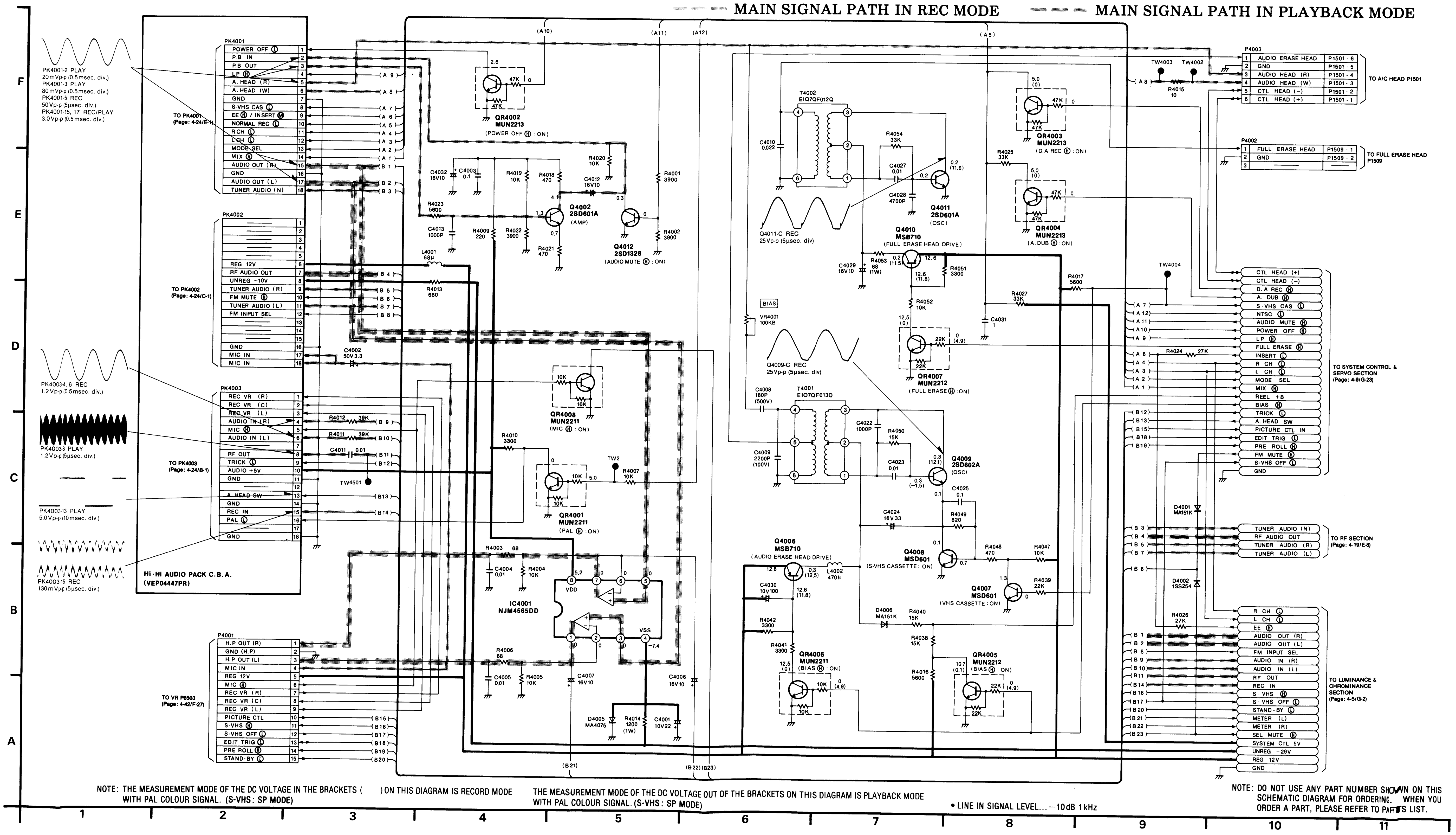
SYSTEM CONTROL & SERVO TR.s DC VOLTAGE CHART (S-VHS: SP MODE)

REF. NO.	Q6001			Q6002			Q6003			Q6004								
MODE	E	C	B	E	C		E	C		E	C	B						
STOP	5.1	−0.5	5.0	0	5.0		0	5.0		5.1	5.1	5.7						
PLAY	5.1	5.0	4.3	0	5.0		0	5.0		5.1	5.1	5.7						
REC	5.1	5.0	4.3	0	5.0		0	5.0		5.1	5.1	5.7						
F.F	5.1	5.0	4.3	0	5.0		0	5.0		5.1	5.1	5.7						
REW	5.1	5.0	4.3	0	5.0		0	5.0		5.1	5.1	5.7						

REF. NO.	QR2001			QR2002			QR2003			QR2004			QR6002			QR6003		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	4.9	0	0	4.9	5.1	4.3	5.0	5.0	0.4	4.8	0	0	3.0	0	3.0	0
PLAY	0	0	4.9	0	0	4.9	5.1	4.8	5.0	5.0	0.4	4.8	0	0	3.0	0	3.0	0
REC	0	0	4.9	0	0	4.9	5.1	4.8	5.0	5.0	0.4	4.8	0	0	3.0	0	3.0	0
F.F	0	0	0	0	1.2	0	5.1	4.8	5.0	5.0	0.4	4.8	0	0	3.0	0	3.0	0
REW	0	0	0	0	1.2	0	5.1	4.8	5.0	5.0	0.4	4.8	0	0	3.0	0	3.0	0

REF. NO.	QR6006			QR6007														
MODE	E	C	B	1	2	3	4	5										
STOP	0	0	8.7	0	0	4.9	−0.1	4.9										
PLAY	0	0	8.7	0	0	4.9	−0.1	4.9										
REC	0	0	8.7	0	0	4.9	−0.1	4.9										
F.F	0	0	8.7	14.3	7.7	0	−0.1	0										
REW	0	0	8.7	14.3	7.7	0	−0.1	0										

4-5. AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
PK4001-2 PLAY 20mVp-p (0.5msec. div.)
PK4001-3 PLAY 80mVp-p (0.5msec. div.)
PK4001-5 REC 50Vp-p (5μsec. div.)
PK4001-15, 17 REC/PLAY 3.0Vp-p (0.5msec. div.)
PK40034, 6 REC 1.2Vp-p (0.5msec. div.)
PK40038 PLAY 1.2Vp-p (5μsec. div.)
PK4003-13 PLAY 5.0Vp-p (10msec. div.)
PK4003-15 REC 130mVp-p (5μsec. div.)
HI-HI AUDIO PACK C.B.A. (VEP04447PR)
PK4001
POWER OFF Ⓛ
P.B IN
P.B OUT
LP Ⓗ
A. HEAD (R)
A. HEAD (W)
GND
S-VHS CAS Ⓛ
EE Ⓗ / INSERT Ⓗ
NORMAL REC Ⓛ
R CH Ⓛ
L CH Ⓛ
MODE SEL
MIX Ⓗ
AUDIO OUT (R)
GND
AUDIO OUT (L)
TUNER AUDIO (N)
TO PK4001 (Page: 4-24/E-1)
PK4002
REG 12V
RF AUDIO OUT
UNREG −10V
TUNER AUDIO (R)
FM MUTE Ⓗ
TUNER AUDIO (L)
FM INPUT SEL
GND
MIC IN
MIC IN
TO PK4002 (Page: 4-24/C-1)
PK4003
REC VR (R)
REC VR (C)
REC VR (L)
AUDIO IN (R)
MIC Ⓗ
AUDIO IN (L)
RF OUT
TRICK Ⓛ
AUDIO +5V
GND
A. HEAD SW
GND
REC IN
PAL Ⓛ
GND
TO PK4003 (Page: 4-24/B-1)
TW4501
P4001
H.P OUT (R)
GND (H.P)
H.P OUT (L)
MIC IN
REG 12V
MIC Ⓗ
REC VR (R)
REC VR (C)
REC VR (L)
PICTURE CTL
S-VHS Ⓗ
S-VHS OFF Ⓛ
EDIT TRIG Ⓛ
PRE ROLL Ⓗ
STAND-BY Ⓛ
TO VR P6503 (Page: 4-42/F-27)
QR4002 MUN2213 (POWER OFF Ⓗ : ON)
C4032 16V10
C4003 0.1
R4019 10K
R4018 470
R4020 10K
C4012 16V10
R4023 5600
C4013 1000P
R4009 220
R4022 3900
R4021 470
L4001 68μ
R4013 680
Q4002 2SD601A (AMP)
Q4012 2SD1328 (AUDIO MUTE Ⓗ : ON)
R4001 3900
R4002 3900
C4002 50V3.3
QR4008 MUN2211 (MIC Ⓗ : ON)
R4012 39K
R4011 39K
C4011 0.01
R4010 3300
QR4001 MUN2211 (PAL Ⓗ : ON)
TW2
R4007 10K
R4003 68
C4004 0.01
R4004 10K
IC4001 NJM4565DD
VDD
VSS
R4006 68
C4005 0.01
R4005 10K
C4007 16V10
C4006 16V10
D4005 MA4075
R4014 1200 (1W)
C4001 10V22
T4002 EIQ7QF012Q
C4010 0.022
R4054 33K
C4027 0.01
C4028 4700P
Q4011 2SD601A (OSC)
Q4011-C REC 25Vp-p (5μsec. div)
Q4010 MSB710 (FULL ERASE HEAD DRIVE)
C4029 16V10
R4053 68 (1W)
R4051 3300
R4052 10K
BIAS
VR4001 100KB
QR4007 MUN2212 (FULL ERASE Ⓗ : ON)
Q4009-C REC 25Vp-p (5μsec. div)
C4008 180P (500V)
T4001 EIQ7QF013Q
C4022 1000P
R4050 15K
C4009 2200P (100V)
C4023 0.01
Q4009 2SD602A (OSC)
C4025 0.1
C4024 16V33
R4049 820
Q4006 MSB710 (AUDIO ERASE HEAD DRIVE)
L4002 470μ
Q4008 MSD601 (S-VHS CASSETTE : ON)
R4048 470
R4047 10K
Q4007 MSD601 (VHS CASSETTE : ON)
R4039 22K
C4030 10V100
R4042 3300
D4006 MA151K
R4040 15K
R4038 15K
R4041 3300
QR4006 MUN2211 (BIAS Ⓗ : ON)
R4016 5600
QR4005 MUN2212 (BIAS Ⓗ : ON)
QR4003 MUN2213 (D.A REC Ⓗ : ON)
R4025 33K
QR4004 MUN2213 (A.DUB Ⓗ : ON)
R4027 33K
C4031 1
R4017 5600
TW4004
R4024 27K
D4001 MA151K
D4002 1SS254
R4026 27K
TW4003
TW4002
R4015 10
P4003
AUDIO ERASE HEAD P1501-6
GND P1501-5
AUDIO HEAD (R) P1501-4
AUDIO HEAD (W) P1501-3
CTL HEAD (−) P1501-2
CTL HEAD (+) P1501-1
TO A/C HEAD P1501
P4002
FULL ERASE HEAD P1509-1
GND P1509-2
TO FULL ERASE HEAD P1509
CTL HEAD (+)
CTL HEAD (−)
D. A REC Ⓗ
A. DUB Ⓗ
S-VHS CAS Ⓛ
NTSC Ⓛ
AUDIO MUTE Ⓗ
POWER OFF Ⓗ
LP Ⓗ
FULL ERASE Ⓗ
INSERT Ⓛ
R CH Ⓛ
L CH Ⓛ
MODE SEL
MIX Ⓗ
REEL +B
BIAS Ⓗ
TRICK Ⓛ
A. HEAD SW
PICTURE CTL IN
EDIT TRIG Ⓛ
PRE ROLL Ⓗ
FM MUTE Ⓗ
S-VHS OFF Ⓛ
GND
TO SYSTEM CONTROL & SERVO SECTION (Page: 4-9/G-23)
TUNER AUDIO (N)
RF AUDIO OUT
TUNER AUDIO (R)
TUNER AUDIO (L)
TO RF SECTION (Page: 4-19/E-8)
R CH Ⓛ
L CH Ⓛ
EE Ⓗ
AUDIO OUT (R)
AUDIO OUT (L)
FM INPUT SEL
AUDIO IN (R)
AUDIO IN (L)
RF OUT
REC IN
S-VHS Ⓗ
S-VHS OFF Ⓛ
STAND-BY Ⓛ
METER (L)
METER (R)
SEL MUTE Ⓗ
SYSTEM CTL 5V
UNREG −29V
REG 12V
GND
TO LUMINANCE & CHROMINANCE SECTION (Page: 4-5/G-2)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

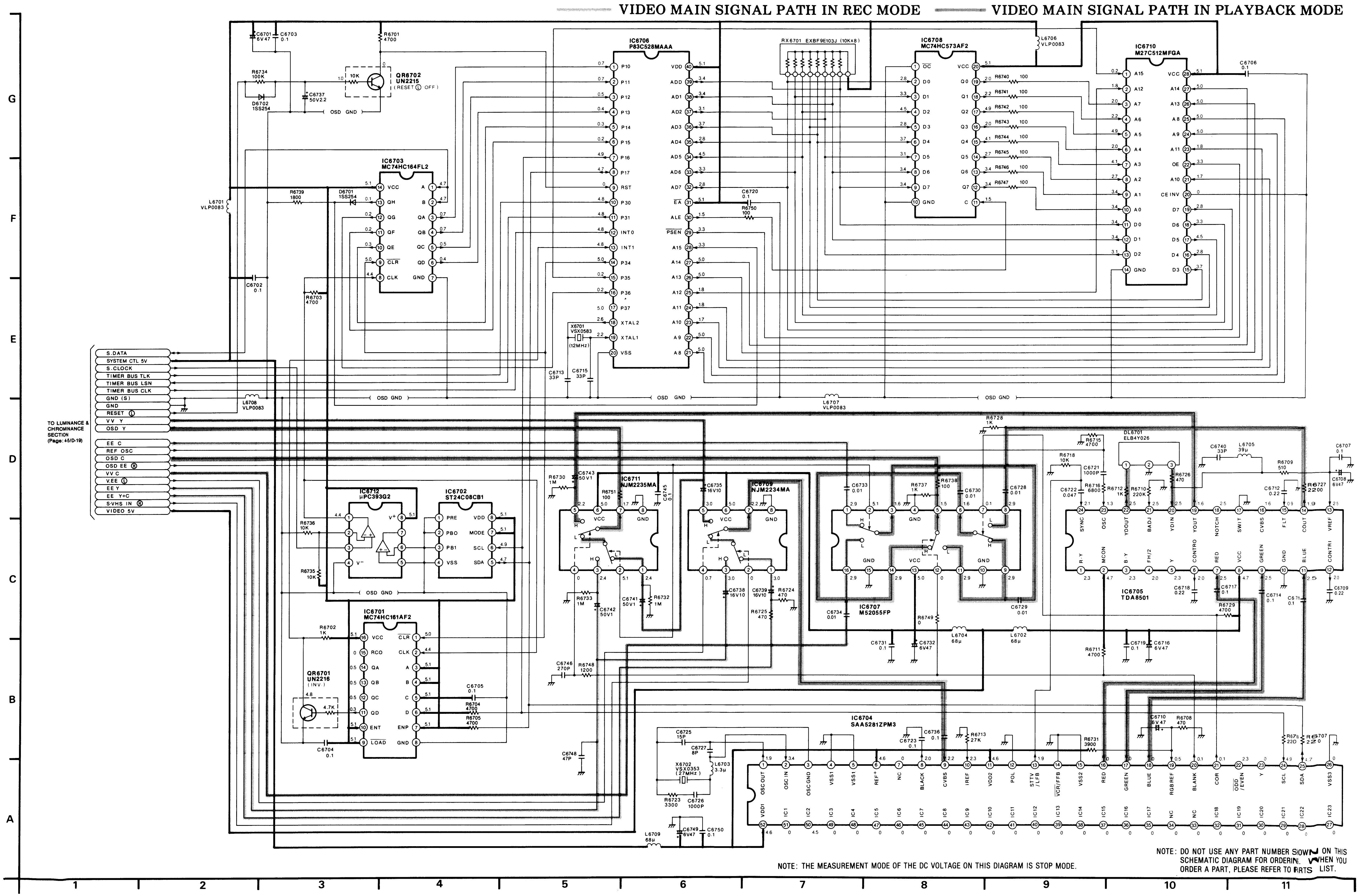
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

• LINE IN SIGNAL LEVEL...−10dB 1kHz

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-6. OSD SECTION IN MAIN SCHEMATIC DIAGRAM


VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

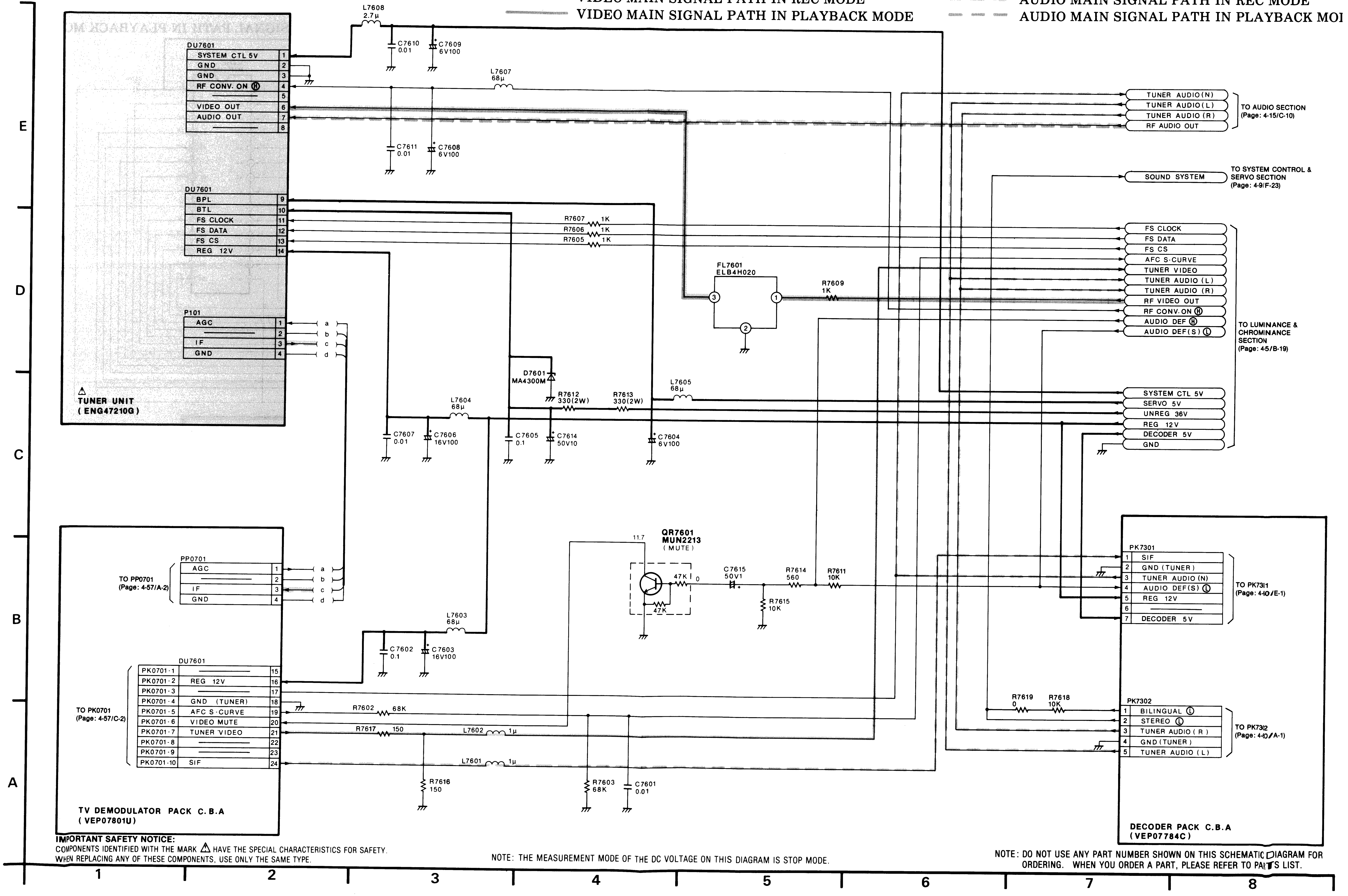
IC6706
P83C528MAAA
IC6708
MC74HC573AF2
IC6710
M27C512MFGA
RX6701 EXBF9E103J (10K×8)
IC6703
MC74HC164FL2
IC6712
μPC393G2
IC6702
ST24C08CB1
IC6701
MC74HC161AF2
IC6711
NJM2235MA
IC6709
NJM2234MA
IC6707
M52055FP
IC6705
TDA8501
IC6704
SAA5281ZPM3
QR6702
UN2215
(RESET Ⓛ OFF)
QR6701
UN2216
(INV)
X6701
VSX0583
(12MHz)
X6702
VSX0353
(27MHz)
DL6701
ELB4Y026
L6701
VLP0083
L6706
VLP0083
L6707
VLP0083
L6708
VLP0083
OSD GND
TO LUMINANCE & CHROMINANCE SECTION (Page: 4-5/D-19)
S.DATA
SYSTEM CTL 5V
S.CLOCK
TIMER BUS TLK
TIMER BUS LSN
TIMER BUS CLK
GND (S)
GND
RESET Ⓛ
VV Y
OSD Y
EE C
REF OSC
OSD C
OSD EE Ⓗ
VV C
VEE Ⓛ
EE Y
EE Y+C
S-VHS IN Ⓗ
VIDEO 5V
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-7. RF SECTION IN MAIN SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MO

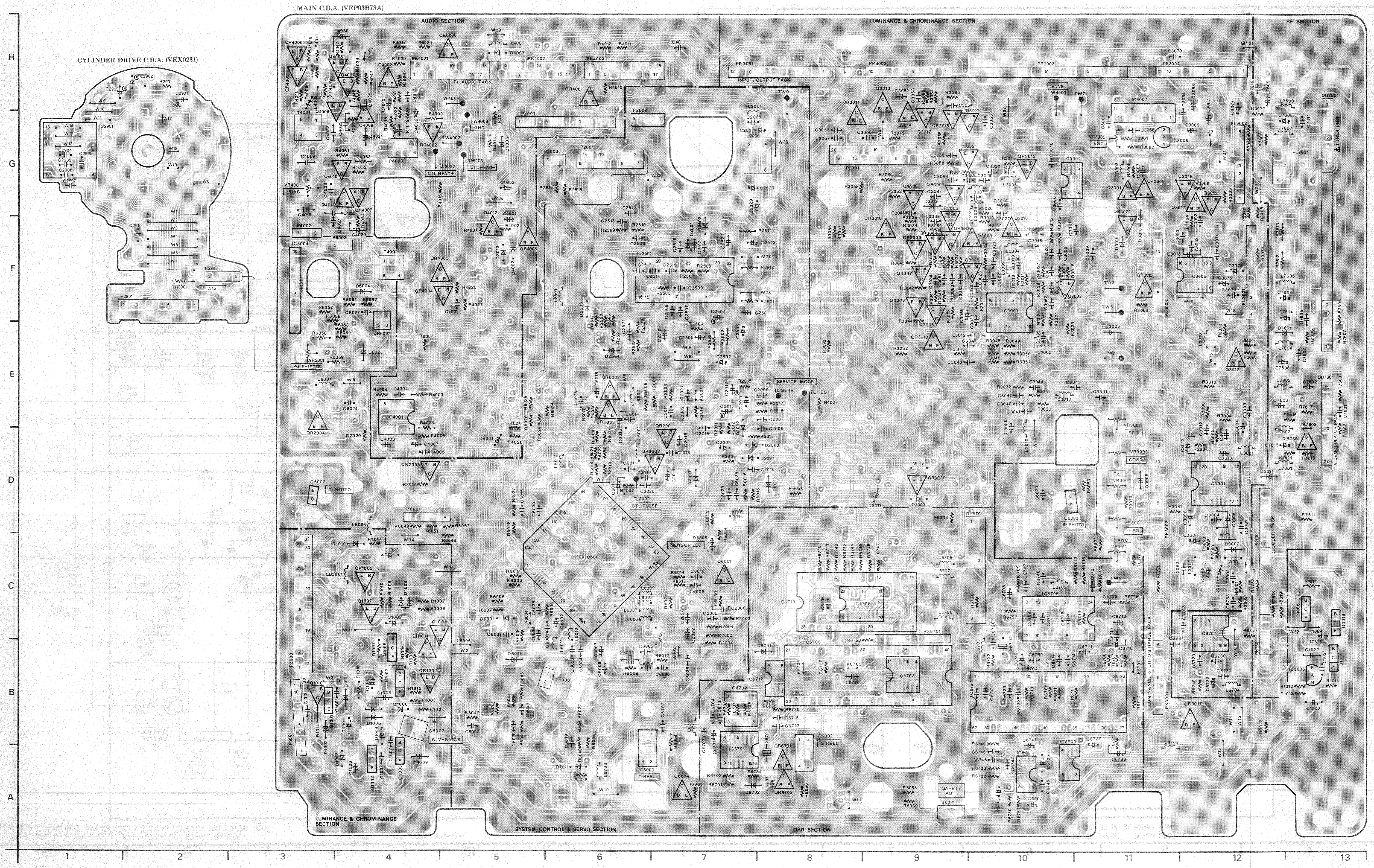

E
D
C
B
A
1
2
3
4
5
6
7
8
DU7601
SYSTEM CTL 5V
GND
GND
RF CONV. ON Ⓗ
VIDEO OUT
AUDIO OUT
BPL
BTL
FS CLOCK
FS DATA
FS CS
REG 12V
P101
AGC
IF
GND
a
b
c
d
⚠ TUNER UNIT
(ENG47210G)
L7608 2.7μ
C7610 0.01
C7609 6V100
L7607 68μ
C7611 0.01
C7608 6V100
R7607 1K
R7606 1K
R7605 1K
FL7601 ELB4H020
R7609 1K
D7601 MA4300M
R7612 330(2W)
R7613 330(2W)
L7605 68μ
L7604 68μ
C7607 0.01
C7606 16V100
C7605 0.1
C7614 50V10
C7604 6V100
TUNER AUDIO(N)
TUNER AUDIO(L)
TUNER AUDIO (R)
RF AUDIO OUT
TO AUDIO SECTION (Page: 4-15/C-10)
SOUND SYSTEM
TO SYSTEM CONTROL & SERVO SECTION (Page: 4-9/F-23)
FS CLOCK
FS DATA
FS CS
AFC S-CURVE
TUNER VIDEO
TUNER AUDIO (L)
TUNER AUDIO (R)
RF VIDEO OUT
RF CONV. ON Ⓗ
AUDIO DEF Ⓗ
AUDIO DEF(S) Ⓛ
SYSTEM CTL 5V
SERVO 5V
UNREG 36V
REG 12V
DECODER 5V
GND
TO LUMINANCE & CHROMINANCE SECTION (Page: 4-5/B-19)
PP0701
AGC
IF
GND
TO PP0701 (Page: 4-57/A-2)
QR7601 MUN2213 (MUTE)
11.7
47K
47K
0
C7615 50V1
R7614 560
R7611 10K
R7615 10K
L7603 68μ
C7602 0.1
C7603 16V100
PK7301
SIF
GND (TUNER)
TUNER AUDIO (N)
AUDIO DEF(S) Ⓛ
REG 12V
DECODER 5V
TO PK7301 (Page: 4-40/E-1)
DU7601
PK0701-1
PK0701-2 REG 12V
PK0701-3
PK0701-4 GND (TUNER)
PK0701-5 AFC S-CURVE
PK0701-6 VIDEO MUTE
PK0701-7 TUNER VIDEO
PK0701-8
PK0701-9
PK0701-10 SIF
TO PK0701 (Page: 4-57/C-2)
R7602 68K
R7617 150
L7602 1μ
L7601 1μ
R7616 150
R7603 68K
C7601 0.01
R7619 0
R7618 10K
PK7302
BILINGUAL Ⓛ
STEREO Ⓛ
TUNER AUDIO (R)
GND (TUNER)
TUNER AUDIO (L)
TO PK7302 (Page: 4-40/A-1)
TV DEMODULATOR PACK C.B.A (VEP07801U)
DECODER PACK C.B.A (VEP07784C)

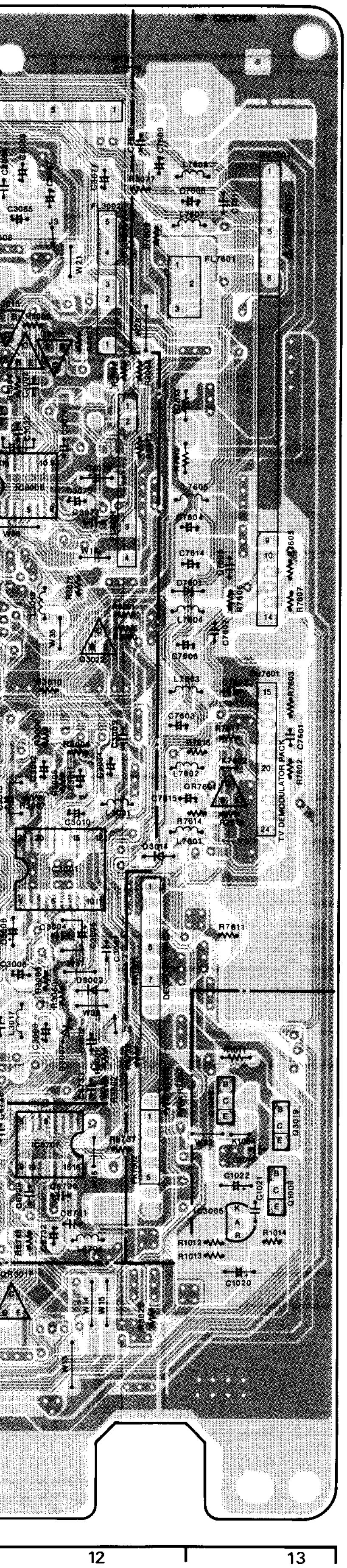
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-8. MAIN C.B.A. (VEP03B73A)


CYLINDER DRIVE C.B.A. (VEX0231)
MAIN C.B.A. (VEP03B73A)
AUDIO SECTION
LUMINANCE & CHROMINANCE SECTION
RF SECTION
HI-FI AUDIO PACK
INPUT/OUTPUT PACK
SERVICE MODE
TL SERV
TL TEST
SENSOR LED
T-PHOTO
S-PHOTO
T-REEL
S-REEL
SAFETY TAB
S-VHS CAS
PG SHIFTER
CTL PULSE
CTL HEAD+
CTL HEAD-
BIAS
GND
AGC
ENVE
SPQ
COSQ
LPQ
ANC
TUNER UNIT
TV DEMODULATOR PACK
DECODER PACK
LUMINANCE & CHROMINANCE PACK
LUMINANCE & CHROMINANCE SECTION
SYSTEM CONTROL & SERVO SECTION
OSD SECTION
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13



MAIN C.B.A. ADDRESS INFORMATION

SYSTEM CONTROL & SERVO SECTION	
Transistor	
Q6001	C-7
Q6002	D-3
Q6003	D-10
Q6004	A-7
Transistor & Resistor	
QR2001	D-7
QR2002	D-7
QR2003	D-4
QR2004	D-3
QR6002	E-6
QR6003	E-6
QR6006	H-5
QR6007	E-4
Integrated Circuit	
IC2501	F-7
IC6001	C-6
IC6002	B-8
IC6003	A-6
IC6004	F-3
Test Point	
TL2002	D-6
TLSERV	E-8
TLTEST	E-8
TW9	H-8
TW2031	G-5
TW2032	G-4
Adjustment	
VR2001	E-3
Connector	
P2002	G-6
P2003	G-6
P2004	G-6
P6001	D-4
P6002	F-4
P6003	B-6

ADDRESS INFORMATION

LUMINANCE & CHROMINANCE SECTION	
Transistor	
Q1001	B-3
Q1002	A-4
Q1003	A-4
Q1004	B-4
Q1005	B-4
Q1006	C-4
Q1007	C-4
Q1008	C-13
Q1009	B-13
Q1010	B-3
Q3001	G-11
Q3003	F-10
Q3005	F-10
Q3006	F-9
Q3007	F-9
Q3008	F-9
Q3009	F-10
Q3010	F-10
Q3011	G-10
Q3012	G-9
Q3013	H-9
Q3014	G-9
Q3015	G-9
Q3016	G-12
Q3017	G-12
Q3018	G-12
Q3019	C-13
Q3021	G-10
Q3022	E-12
Transistor & Resistor	
QR1001	B-4
QR1002	B-4
QR1003	C-4
QR3001	G-11
QR3004	F-9
QR3006	G-9
QR3007	G-9
QR3008	F-9
QR3009	F-9
QR3010	E-9
QR3011	G-8
QR3012	G-10
QR3013	F-11
QR3015	G-9
QR3016	F-9
QR3017	B-12
QR3020	D-9
QR3021	F-11
Integrated Circuit	
IC3001	D-12
IC3003	F-10
IC3004	G-10
IC3005	B-13
IC3006	F-12
IC3007	H-11
IC3008	G-11
Test Point	
TW1	C-11
TW3	F-11
TW5	F-11
TW7	H-11
Adjustment	
VR3001	D-11
VR3002	E-11
VR3003	D-11
VR3004	D-11
VR3005	G-11
VR3014	C-11
Connector	
P1001	B-3
P3001	G-8
P3003	B-3
PP3001	H-7
PP3002	H-9
PP3003	H-10
PP3004	H-11
PK3001	B-11
PK3002	D-11
PK3003	F-11

ADDRESS INFORMATION

AUDIO SECTION	
Transistor	
Q4002	H-4
Q4006	H-4
Q4007	H-4
Q4008	G-4
Q4009	G-4
Q4010	G-4
Q4011	G-4
Q4012	F-5
Transistor & Resistor	
QR4001	H-6
QR4002	G-4
QR4003	F-5
QR4004	F-5
QR4005	H-3
QR4006	H-3
QR4007	G-4
QR4008	F-5
Integrated Circuit	
IC4001	E-4
Test Point	
TW2	E-11
TW4002	G-5
TW4003	G-5
TW4004	H-5
TW4501	H-10
Adjustment	
VR4001	G-3
Connector	
P4001	G-5
P4002	F-3
P4003	G-4
PK4001	H-4
PK4002	H-5
PK4003	H-6

ADDRESS INFORMATION

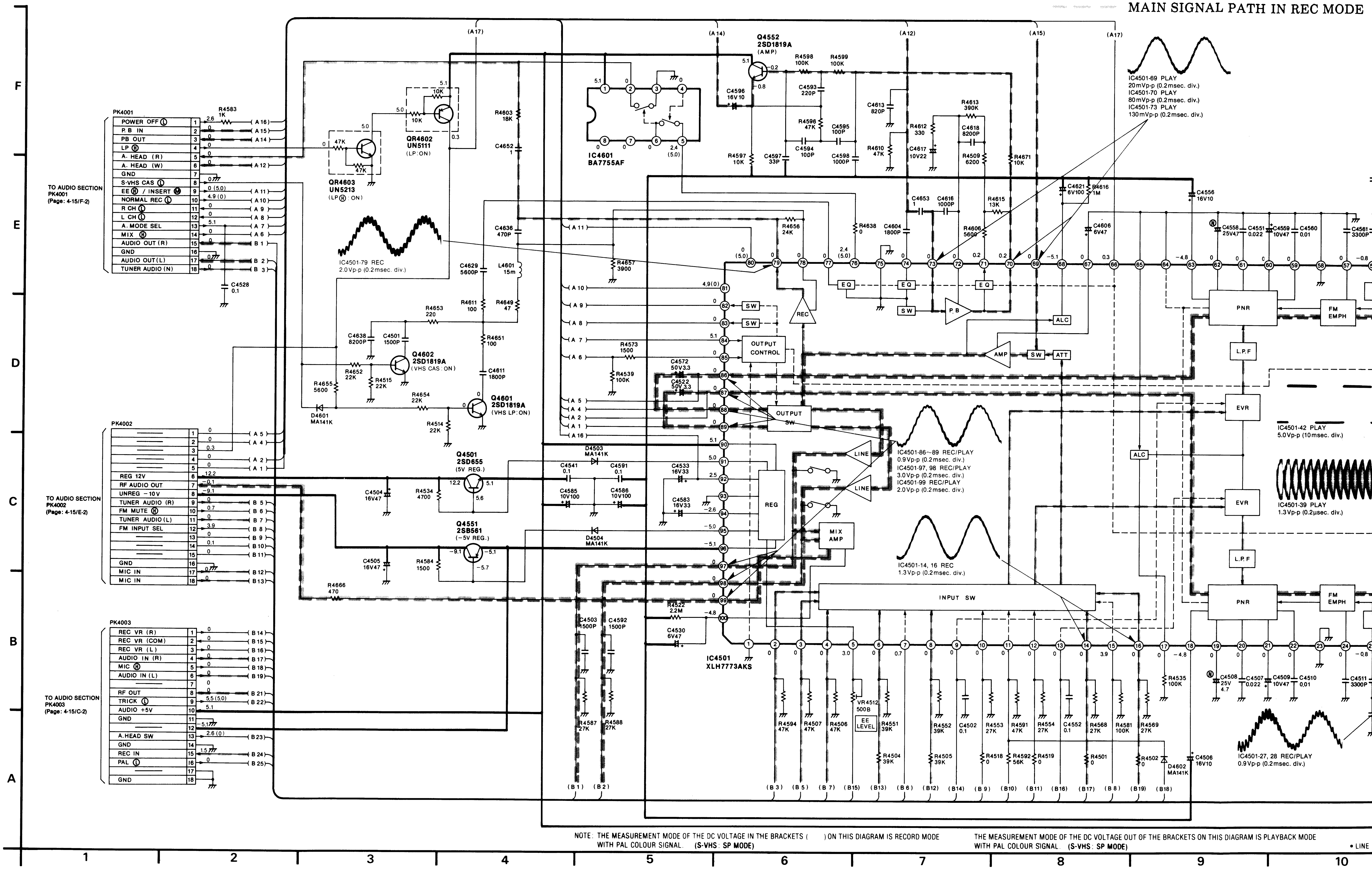
OSD SECTION	
Transistor & Resistor	
QR6701	A-8
QR6702	A-8
Integrated Circuit	
IC6701	A-7
IC6702	B-7
IC6703	B-9
IC6704	B-10
IC6705	C-10
IC6706	E-8
IC6707	C-12
IC6708	C-9
IC6709	A-10
IC6710	C-8
IC6711	A-10
IC6712	B-8

ADDRESS INFORMATION

RF SECTION	
Transistor & Resistor	
QR7601	D-13
Connector	
PK7301	C-12
PK7302	B-12

ADDRESS INFORMATION

4-9. Hi-Fi AUDIO PACK SCHEMATIC DIAGRAM

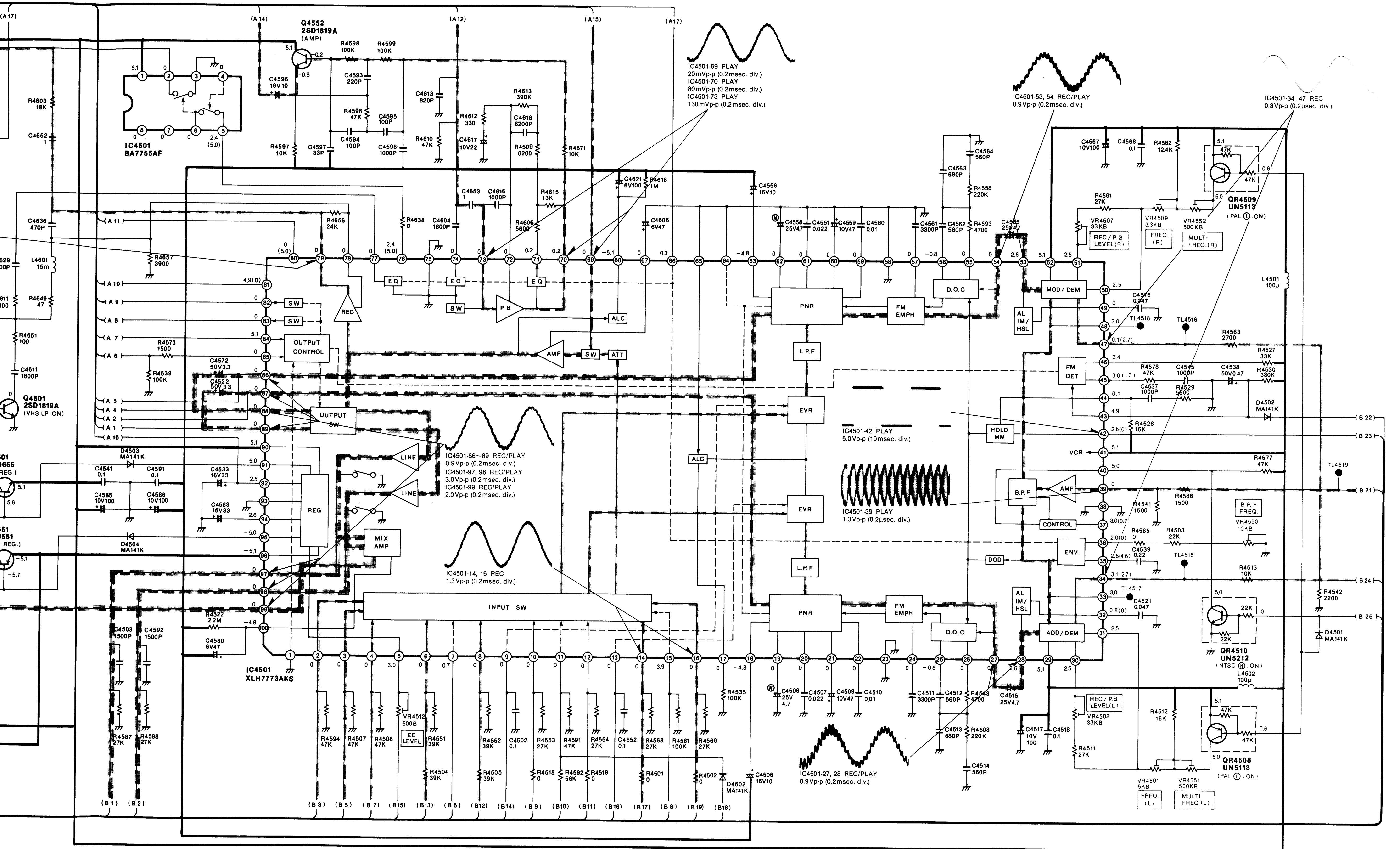

MAIN SIGNAL PATH IN REC MODE
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
TO AUDIO SECTION PK4001 (Page: 4-15/F-2)
PK4001
POWER OFF Ⓛ
P.B IN
PB OUT
LP Ⓗ
A. HEAD (R)
A. HEAD (W)
GND
S-VHS CAS Ⓛ
EE Ⓗ / INSERT Ⓜ
NORMAL REC Ⓛ
R CH Ⓛ
L CH Ⓛ
A. MODE SEL
MIX Ⓗ
AUDIO OUT (R)
GND
AUDIO OUT (L)
TUNER AUDIO (N)
TO AUDIO SECTION PK4002 (Page: 4-15/E-2)
PK4002
REG 12V
RF AUDIO OUT
UNREG -10V
TUNER AUDIO (R)
FM MUTE Ⓗ
TUNER AUDIO (L)
FM INPUT SEL
GND
MIC IN
MIC IN
TO AUDIO SECTION PK4003 (Page: 4-15/C-2)
PK4003
REC VR (R)
REC VR (COM)
REC VR (L)
AUDIO IN (R)
MIC Ⓗ
AUDIO IN (L)
RF OUT
TRICK Ⓛ
AUDIO +5V
GND
A.HEAD SW
GND
REC IN
PAL Ⓛ
GND
QR4602 UN5111 (LP:ON)
QR4603 UN5213 (LP Ⓗ : ON)
Q4602 2SD1819A (VHS CAS: ON)
Q4601 2SD1819A (VHS LP: ON)
D4601 MA141K
Q4501 2SD655 (5V REG.)
Q4551 2SB561 (-5V REG.)
D4503 MA141K
D4504 MA141K
IC4601 BA7755AF
Q4552 2SD1819A (AMP)
IC4501 XLH7773AKS
D4602 MA141K
EQ
SW
P.B
REC
OUTPUT CONTROL
OUTPUT SW
AMP
ATT
ALC
LINE
REG
MIX AMP
INPUT SW
PNR
FM EMPH
L.P.F
EVR
EE LEVEL
VR4512 500B
IC4501-79 REC 2.0Vp-p (0.2msec. div.)
IC4501-69 PLAY 20mVp-p (0.2msec. div.)
IC4501-70 PLAY 80mVp-p (0.2msec. div.)
IC4501-73 PLAY 130mVp-p (0.2msec. div.)
IC4501-86~89 REC/PLAY 0.9Vp-p (0.2msec. div.)
IC4501-97, 98 REC/PLAY 3.0Vp-p (0.2msec. div.)
IC4501-99 REC/PLAY 2.0Vp-p (0.2msec. div.)
IC4501-14, 16 REC 1.3Vp-p (0.2msec. div.)
IC4501-42 PLAY 5.0Vp-p (10msec. div.)
IC4501-39 PLAY 1.3Vp-p (0.2μsec. div.)
IC4501-27, 28 REC/PLAY 0.9Vp-p (0.2msec. div.)

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

• LINE

MAIN SIGNAL PATH IN REC MODE — — — MAIN SIGNAL PATH IN PLAYBACK MODE


IC4501-69 PLAY
20mVp-p (0.2msec. div.)
IC4501-70 PLAY
80mVp-p (0.2msec. div.)
IC4501-73 PLAY
130mVp-p (0.2msec. div.)
IC4501-53, 54 REC/PLAY
0.9Vp-p (0.2msec. div.)
IC4501-34, 47 REC
0.3Vp-p (0.2μsec. div.)
IC4501-42 PLAY
5.0Vp-p (10msec. div.)
IC4501-39 PLAY
1.3Vp-p (0.2μsec. div.)
IC4501-86~89 REC/PLAY
0.9Vp-p (0.2msec. div.)
IC4501-97, 98 REC/PLAY
3.0Vp-p (0.2msec. div.)
IC4501-99 REC/PLAY
2.0Vp-p (0.2msec. div.)
IC4501-14, 16 REC
1.3Vp-p (0.2msec. div.)
IC4501-27, 28 REC/PLAY
0.9Vp-p (0.2msec. div.)
Q4552
2SD1819A
(AMP)
IC4601
BA7755AF
Q4601
2SD1819A
(VHS LP:ON)
IC4501
XLH7773AKS
QR4509
UN5113
(PAL Ⓛ:ON)
QR4510
UN5212
(NTSC Ⓗ:ON)
QR4508
UN5113
(PAL Ⓛ:ON)
EQ
SW
P.B
REC
ALC
AMP
ATT
OUTPUT CONTROL
OUTPUT SW
LINE
REG
MIX AMP
INPUT SW
PNR
FM EMPH
L.P.F
EVR
D.O.C
AL IM/ HSL
MOD/DEM
ADD/DEM
FM DET
HOLD MM
B.P.F.
CONTROL
ENV.
DOD
VCB
REC/P.B LEVEL(R)
VR4507 33KB
VR4509 3.3KB FREQ.(R)
VR4552 500KB MULTI FREQ.(R)
REC/P.B LEVEL(L)
VR4502 33KB
VR4501 5KB FREQ.(L)
VR4551 500KB MULTI FREQ.(L)
B.P.F FREQ.
VR4550 10KB
EE LEVEL
VR4512 500B
L4501 100μ
L4502 100μ
L4601 15m
D4501 MA141K
D4502 MA141K
D4503 MA141K
D4504 MA141K
D4602 MA141K
TL4515
TL4516
TL4517
TL4518
TL4519
(A17)
(A14)
(A12)
(A15)
(A11)
(A10)
(A9)
(A8)
(A7)
(A6)
(A5)
(A4)
(A2)
(A1)
(A16)
(B1)
(B2)
(B3)
(B5)
(B7)
(B15)
(B13)
(B6)
(B12)
(B14)
(B9)
(B10)
(B11)
(B16)
(B17)
(B8)
(B19)
(B18)
(B21)
(B22)
(B23)
(B24)
(B25)
4
5
6
7
8
9
10
11
12
13

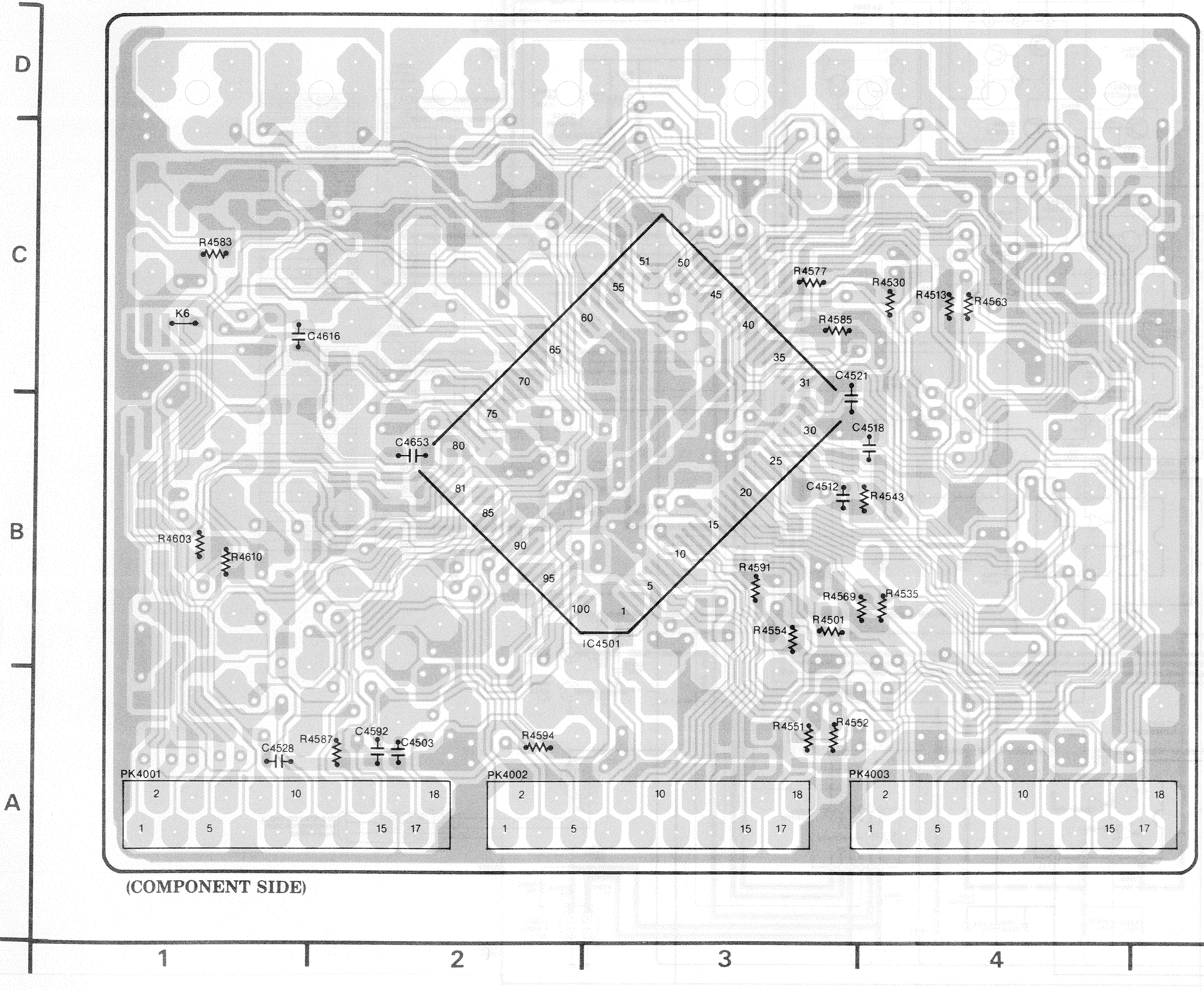
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

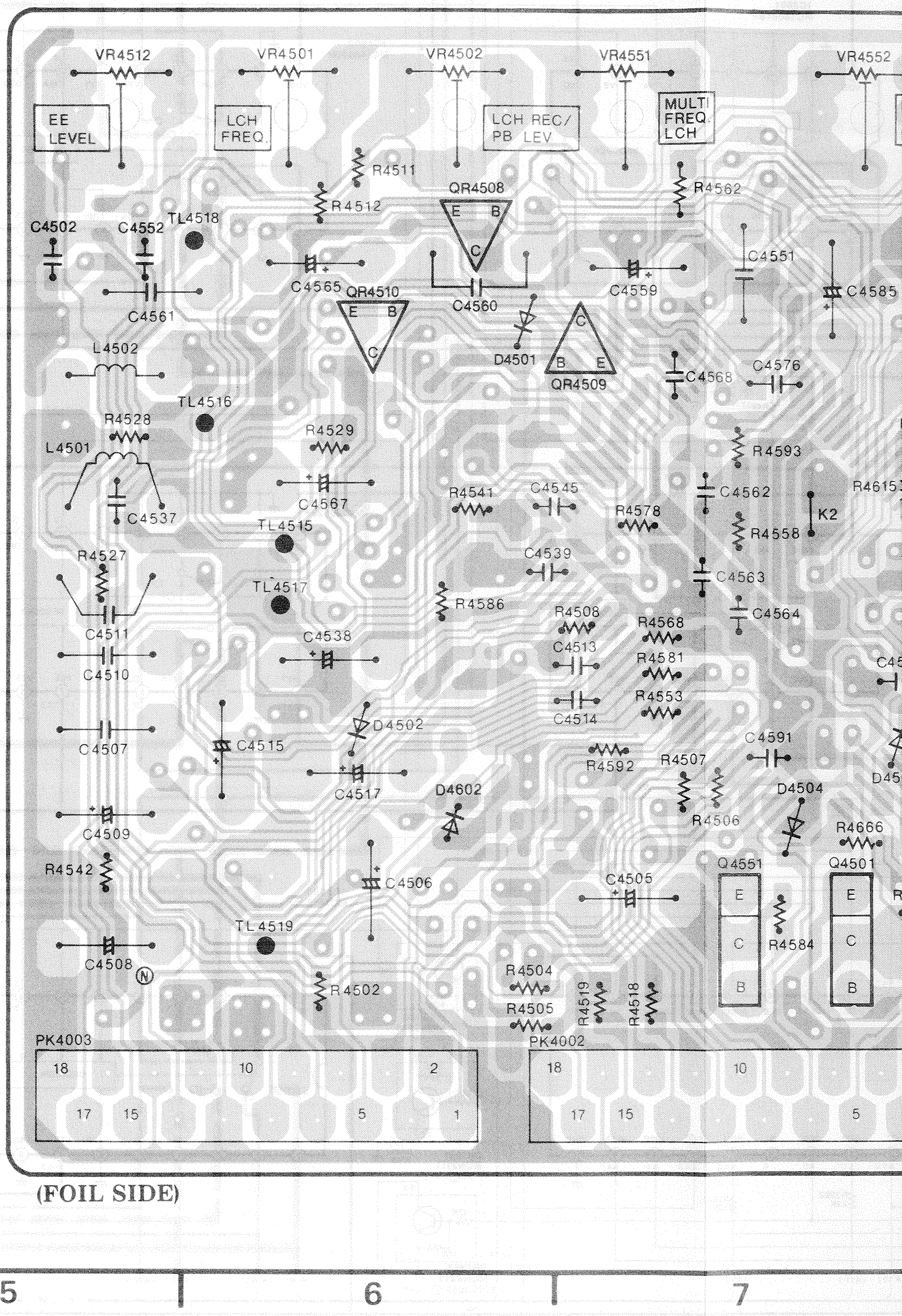
• LINE IN SIGNAL LEVEL... 10dB 1kHz

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

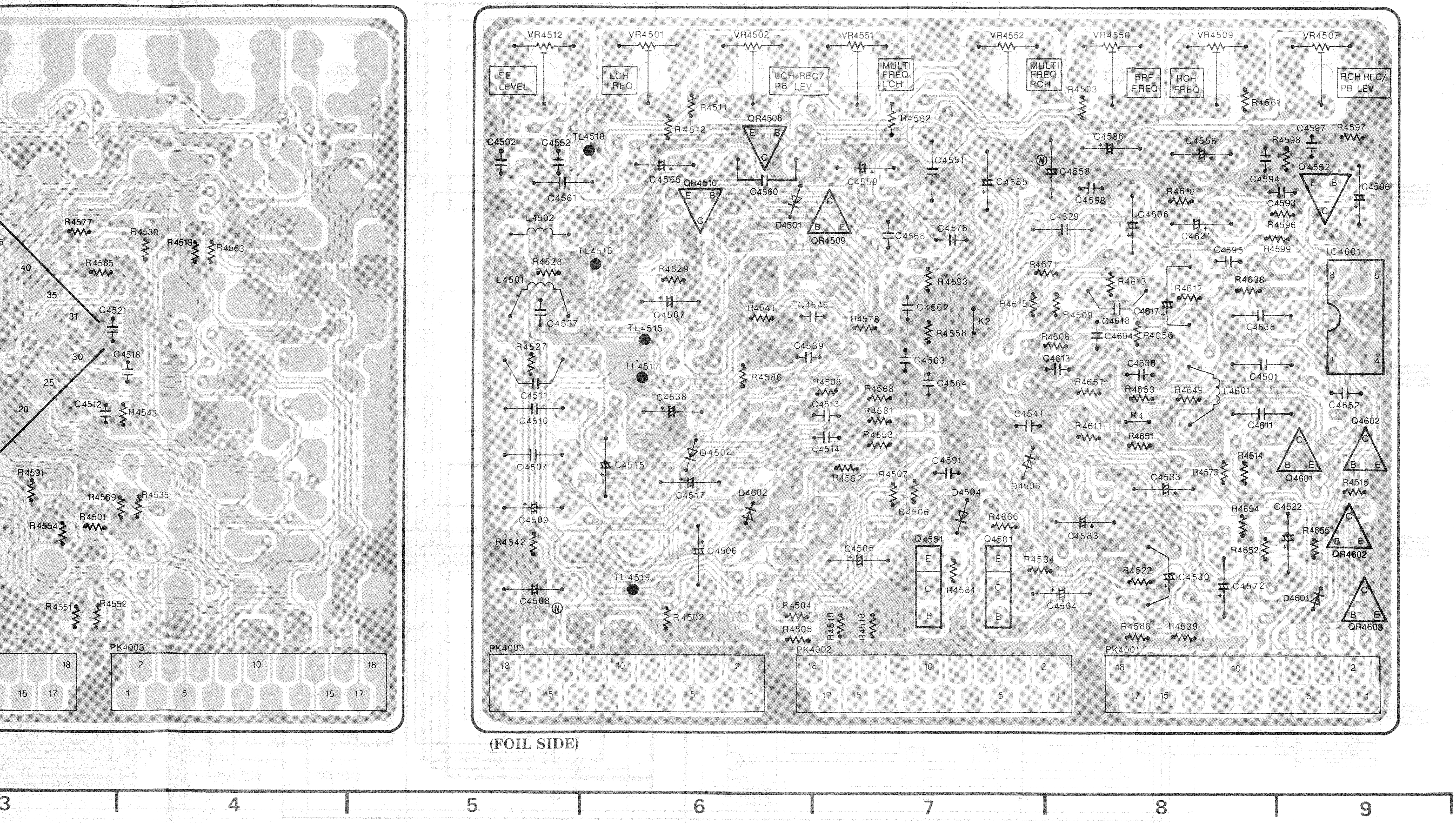
4-10. Hi-Fi AUDIO PACK C.B.A. (VEP04447PR)


D
C
B
A
R4583
K6
C4616
C4653
IC4501
51
50
55
45
60
40
65
35
70
31
75
30
80
25
81
20
85
15
90
10
95
5
100
1
R4577
R4530
R4513
R4563
R4585
C4521
C4518
C4512
R4543
R4603
R4610
R4591
R4569
R4535
R4554
R4501
C4528
R4587
C4592
C4503
R4594
R4551
R4552
PK4001
PK4002
PK4003
1
2
3
4

(COMPONENT SIDE)


VR4512
VR4501
VR4502
VR4551
VR4552
EE LEVEL
LCH FREQ.
LCH REC/PB LEV
MULTI FREQ. LCH
R4511
R4512
QR4508
R4562
C4502
C4552
TL4518
C4565
QR4510
C4560
C4559
C4551
C4585
C4561
D4501
QR4509
L4502
C4568
C4576
TL4516
R4528
R4529
R4593
L4501
C4537
C4567
R4541
C4545
R4578
C4562
R4615
K2
R4558
TL4515
R4527
TL4517
C4539
C4563
R4586
R4508
R4568
C4564
C4511
C4538
C4513
R4581
C4510
R4553
C4514
D4502
C4507
C4515
R4592
R4507
C4591
C4517
D4602
R4506
D4504
C4509
R4666
R4542
C4506
C4505
Q4551
Q4501
R4584
TL4519
C4508
R4504
R4502
R4505
R4519
R4518
PK4003
PK4002
5
6
7

(FOIL SIDE)


VR4512
VR4501
VR4502
VR4551
VR4552
VR4550
VR4509
VR4507
EE LEVEL
LCH FREQ.
LCH REC/ PB LEV
MULTI FREQ. LCH
MULTI FREQ. RCH
BPF FREQ
RCH FREQ
RCH REC/ PB LEV
QR4508
QR4509
QR4510
QR4602
QR4603
Q4552
Q4601
Q4602
Q4551
Q4501
IC4601
TL4515
TL4516
TL4517
TL4518
TL4519
D4501
D4502
D4503
D4504
D4601
D4602
L4501
L4502
L4601
K2
K4
PK4001
PK4002
PK4003
3
4
5
6
7
8
9

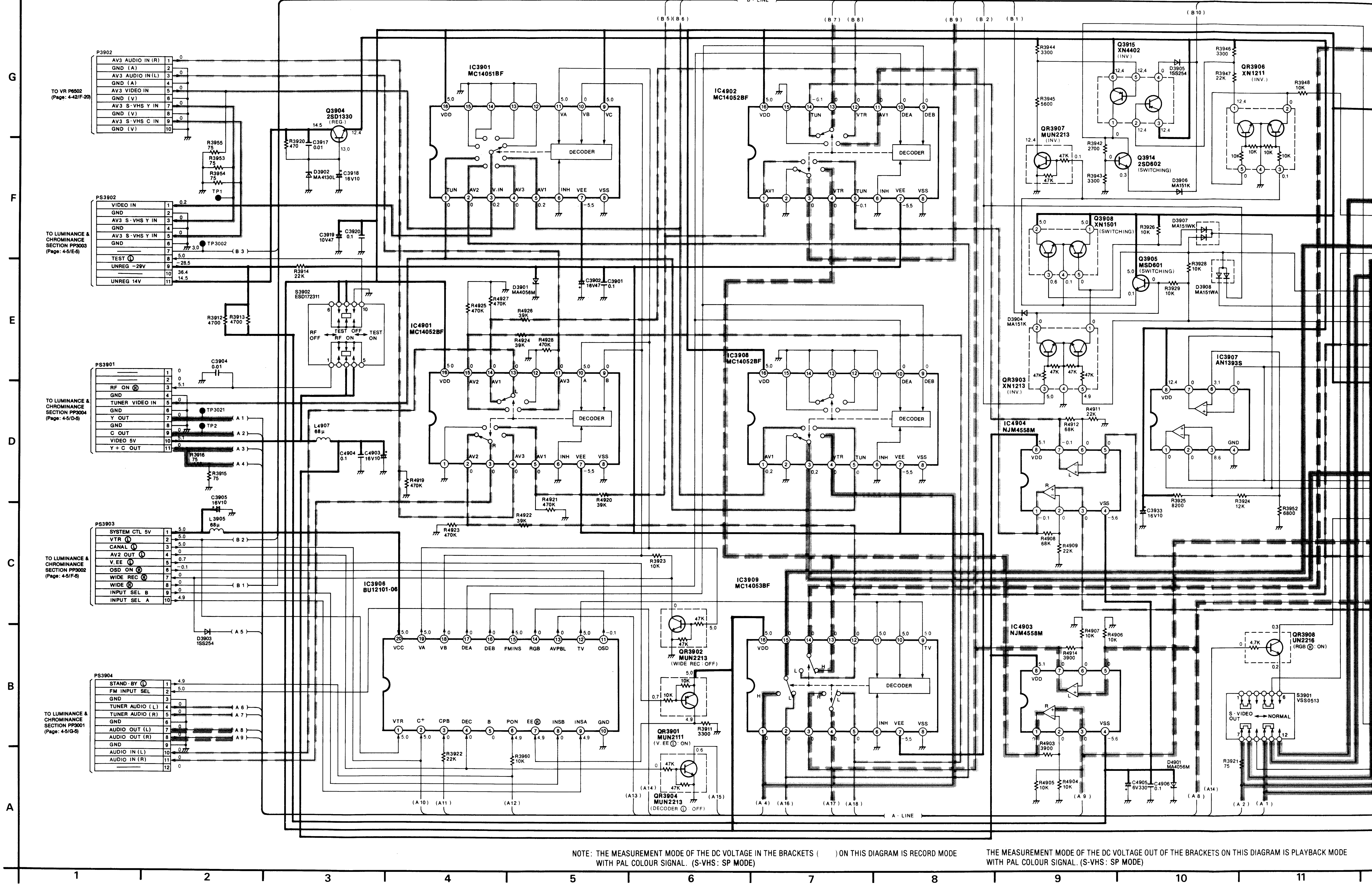
(FOIL SIDE)

Hi-Fi AUDIO PACK C.B.A.	
Transistor	
Q4501	A-7
Q4551	A-7
Q4552	C-9
Q4601	B-9
Q4602	B-9
Transistor & Resistor	
QR4508	C-6
QR4509	C-7
QR4510	C-6
QR4602	B-9
QR4603	A-9
Integrated Circuit	
IC4501	B-3
IC4601	C-9
Test Point	
TL4515	B-6
TL4516	C-5
TL4517	B-6
TL4518	C-5
TL4519	A-6
Adjustment	
VR4501	D-6
VR4502	D-6
VR4507	D-9
VR4509	D-8
VR4512	D-5
VR4550	D-8
VR4551	D-7
VR4552	D-7
Connector	
PK4001	A-1
PK4001	A-8
PK4002	A-2
PK4002	A-7
PK4003	A-4
PK4003	A-5

ADDRESS INFORMATION

4-11. INPUT/OUTPUT PACK SCHEMATIC DIAGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO M
AUDIO M

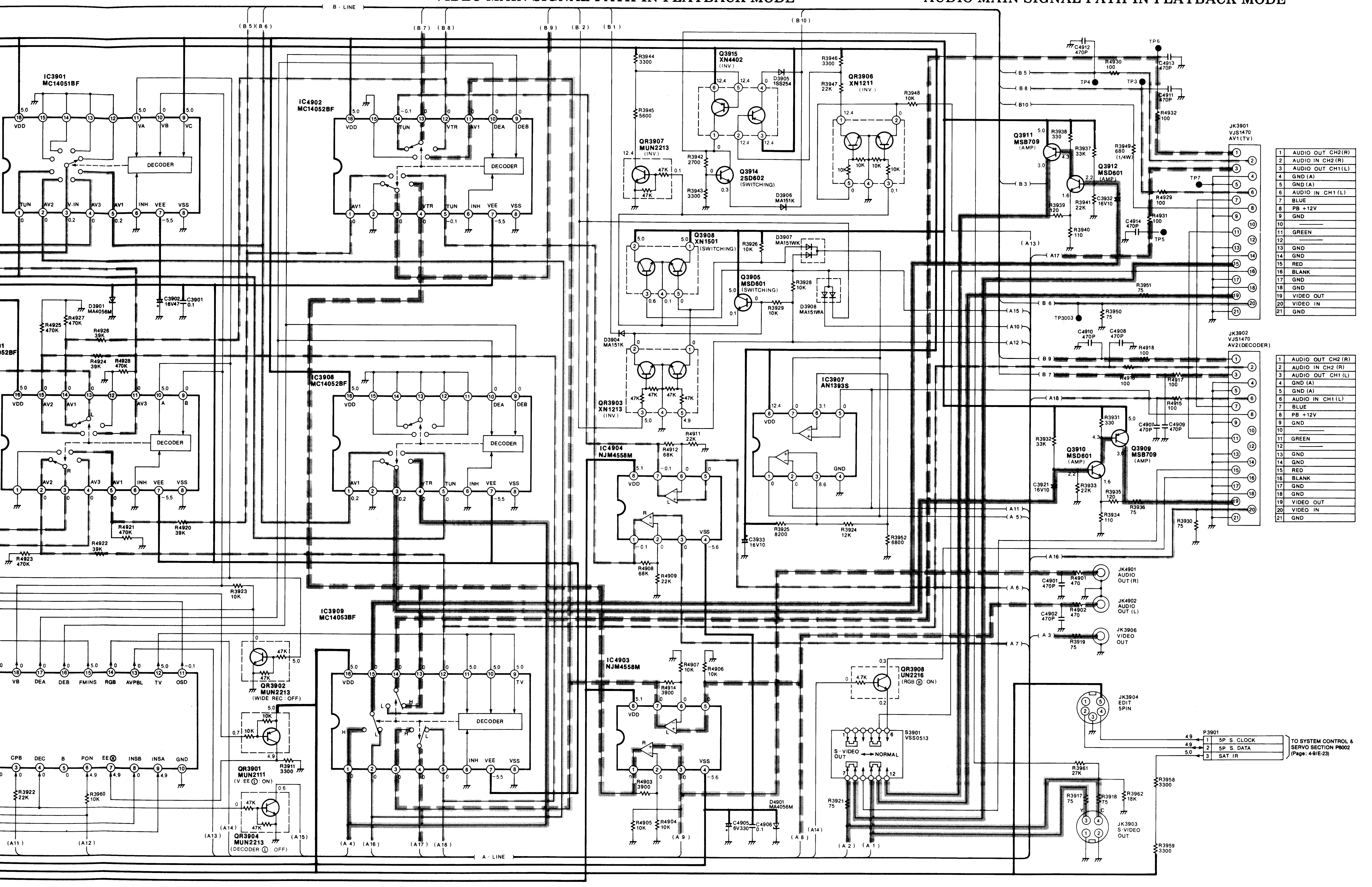

B - LINE
A - LINE
P3902
AV3 AUDIO IN (R)
GND (A)
AV3 AUDIO IN (L)
GND (A)
AV3 VIDEO IN
GND (V)
AV3 S-VHS Y IN
GND (V)
AV3 S-VHS C IN
GND (V)
TO VR P6502 (Page: 4-42/F-20)
PS3902
VIDEO IN
GND
AV3 S-VHS Y IN
GND
AV3 S-VHS Y IN
GND
TEST Ⓛ
UNREG −29V
UNREG 14V
TO LUMINANCE & CHROMINANCE SECTION PP3003 (Page: 4-5/E-6)
PS3901
RF ON Ⓗ
GND
TUNER VIDEO IN
GND
Y OUT
GND
C OUT
VIDEO 5V
Y + C OUT
TO LUMINANCE & CHROMINANCE SECTION PP3004 (Page: 4-5/D-6)
PS3903
SYSTEM CTL 5V
VTR Ⓛ
CANAL Ⓛ
AV2 OUT Ⓛ
V.EE Ⓛ
OSD ON Ⓗ
WIDE REC Ⓗ
WIDE Ⓗ
INPUT SEL B
INPUT SEL A
TO LUMINANCE & CHROMINANCE SECTION PP3002 (Page: 4-5/F-5)
PS3904
STAND-BY Ⓛ
FM INPUT SEL
GND
TUNER AUDIO (L)
TUNER AUDIO (R)
GND
AUDIO OUT (L)
AUDIO OUT (R)
GND
AUDIO IN (L)
AUDIO IN (R)
TO LUMINANCE & CHROMINANCE SECTION PP3001 (Page: 4-5/G-5)
Q3904 2SD1330 (REG)
D3902 MA4130L
TP1
TP3002
TP3021
TP2
S3902 ESD172311
RF OFF
TEST OFF
RF ON
TEST ON
IC3901 MC14051BF
VDD
VA
VB
VC
DECODER
TUN
AV2
V.IN
AV3
AV1
INH
VEE
VSS
IC4901 MC14052BF
D3901 MA4056M
L4907 68μ
IC3906 BU12101-06
VCC
VA
VB
DEA
DEB
FMINS
RGB
AVPBL
TV
OSD
VTR
C+
CPB
DEC
B
PON
EEⓇ
INSB
INSA
GND
D3903 1SS254
L3905 68μ
IC4902 MC14052BF
DEA
DEB
VTR
IC3908 MC14052BF
IC3909 MC14053BF
QR3902 MUN2213 (WIDE REC Ⓛ OFF)
QR3901 MUN2111 (V.EE Ⓛ ON)
QR3904 MUN2213 (DECODER Ⓛ OFF)
Q3915 XN4402 (INV.)
D3905 1SS254
QR3906 XN1211 (INV.)
QR3907 MUN2213 (INV.)
Q3914 2SD602 (SWITCHING)
D3906 MA151K
Q3908 XN1501 (SWITCHING)
D3907 MA151WK
Q3905 MSD601 (SWITCHING)
D3908 MA151WA
D3904 MA151K
QR3903 XN1213 (INV.)
IC3907 AN1393S
IC4904 NJM4558M
IC4903 NJM4558M
D4901 MA4056M
QR3908 UN2216 (RGB Ⓗ ON)
S3901 VSS0513
S-VIDEO OUT
NORMAL
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

AGRAM

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE


B - LINE
A - LINE
IC3901 MC14051BF
IC4902 MC14052BF
IC3908 MC14052BF
IC3909 MC14053BF
IC4904 NJM4558M
IC4903 NJM4558M
IC3907 AN1393S
Q3915 XN4402 (INV.)
QR3906 XN1211 (INV.)
QR3907 MUN2213 (INV.)
Q3914 2SD602 (SWITCHING)
Q3908 XN1501 (SWITCHING)
Q3905 MSD601 (SWITCHING)
QR3903 XN1213 (INV.)
Q3911 MSB709 (AMP)
Q3912 MSD601 (AMP)
Q3910 MSD601 (AMP)
Q3909 MSB709 (AMP)
QR3902 MUN2213 (WIDE REC : OFF)
QR3901 MUN2111 (V.EE Ⓛ ON)
QR3904 MUN2213 (DECODER Ⓛ OFF)
QR3908 UN2216 (RGB Ⓗ ON)
D3901 MA4056M
D3905 1SS254
D3906 MA151K
D3907 MA151WK
D3908 MA151WA
D3904 MA151K
D4901 MA4056M
DECODER
TP3 TP4 TP5 TP6 TP7 TP3003
JK3901 VJS1470 AV1(TV)
JK3902 VJS1470 AV2(DECODER)
1 AUDIO OUT CH2(R)
2 AUDIO IN CH2(R)
3 AUDIO OUT CH1(L)
4 GND (A)
5 GND (A)
6 AUDIO IN CH1(L)
7 BLUE
8 PB +12V
9 GND
10 ———
11 GREEN
12 ———
13 GND
14 GND
15 RED
16 BLANK
17 GND
18 GND
19 VIDEO OUT
20 VIDEO IN
21 GND
JK4901 AUDIO OUT (R)
JK4902 AUDIO OUT (L)
JK3906 VIDEO OUT
JK3904 EDIT 5PIN
JK3903 S-VIDEO OUT
S3901 VSS0513
S-VIDEO OUT
NORMAL
P3901
1 5P S. CLOCK
2 5P S. DATA
3 SAT IR
TO SYSTEM CONTROL & SERVO SECTION P6002 (Page: 4-9/E-23)

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

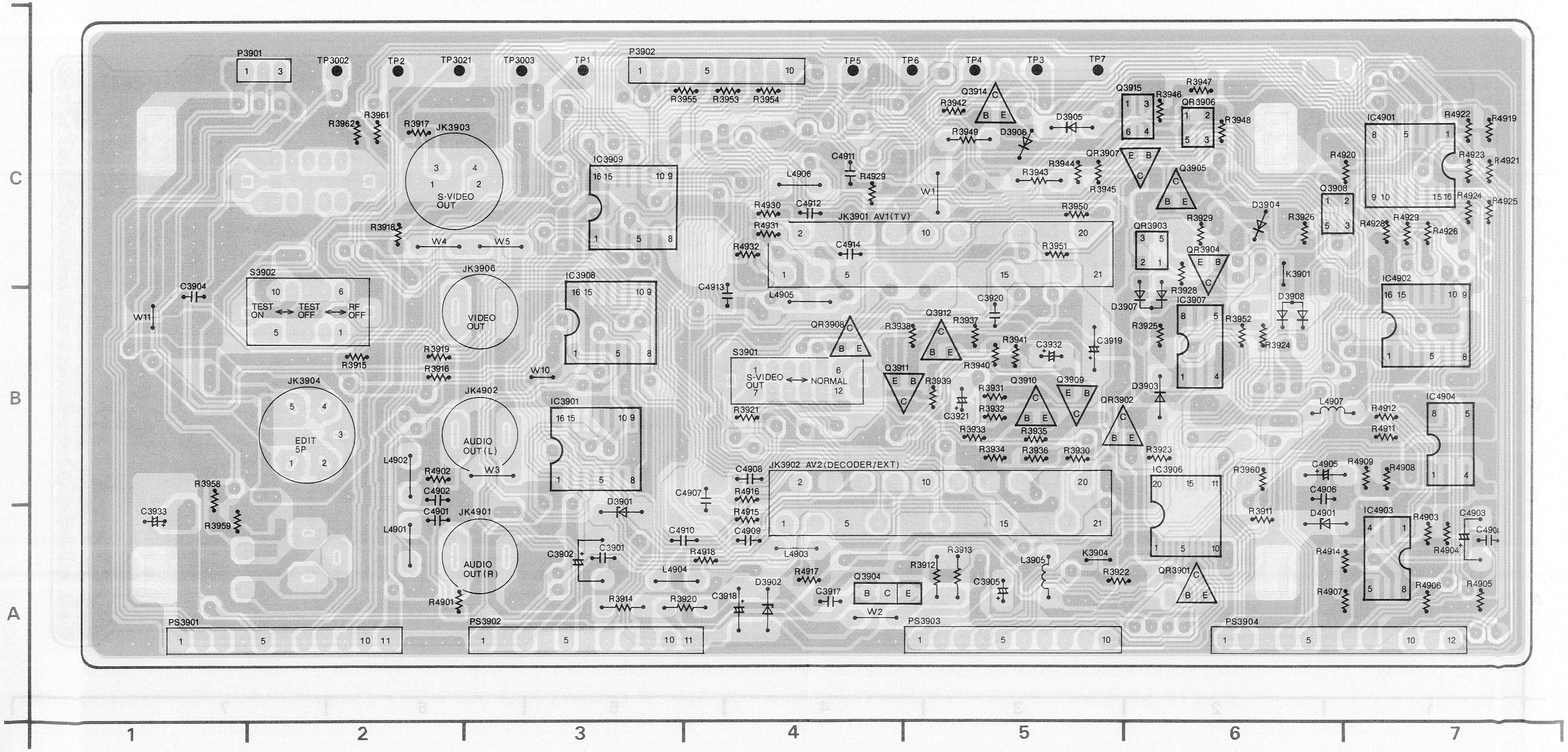
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4 5 6 7 8 9 10 11 12 13 14

4-12. INPUT/OUTPUT PACK C.B.A. (VEP03B75A)

INPUT/OUTPUT PACK C.B.A.	
Transistor	
Q3904	A-4
Q3905	C-6
Q3908	C-6
Q3909	B-5
Q3910	B-5
Q3911	B-4
Q3912	B-5
Q3914	C-5
Q3915	C-6
Transistor & Resistor	
QR3901	A-6
QR3902	B-5
QR3903	C-6
QR3904	C-6
QR3906	C-6
QR3907	C-6
QR3908	B-4
Integrated Circuit	
IC3901	B-3
IC3906	B-6
IC3907	B-6
IC3908	B-3
IC3909	C-3
IC4901	C-7
IC4902	B-7
IC4903	A-7
IC4904	B-7
Test Point	
TP1	C-3
TP2	C-2
TP3	C-5
TP4	C-5
TP5	C-4
TP6	C-5
TP7	C-5
TP3002	C-2
TP3003	C-3
TP3021	C-2
Connector	
P3901	C-2
P3902	C-3
PS3901	A-1
PS3902	A-3
PS3903	A-5
PS3904	A-6

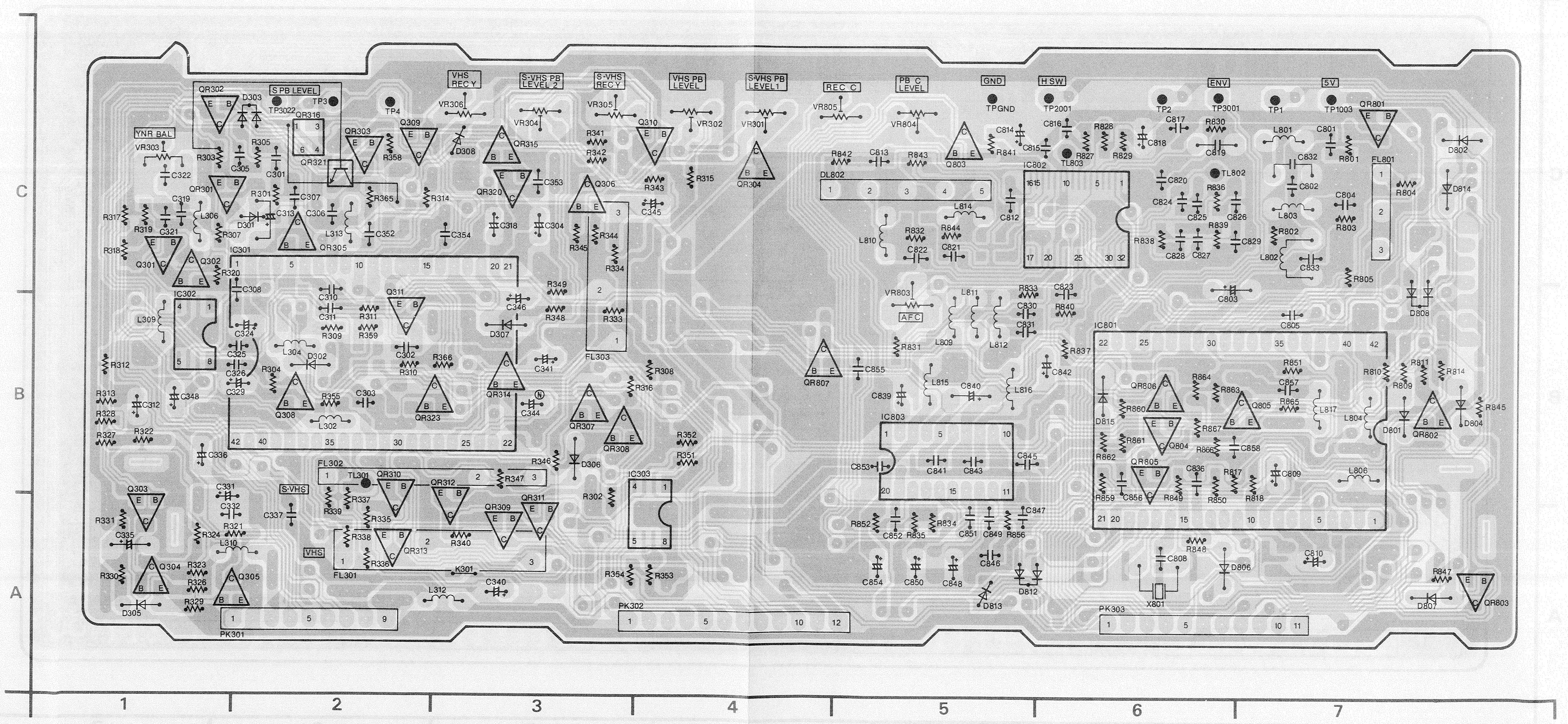
ADDRESS INFORMATION


C
B
A
1
2
3
4
5
6
7
P3901
TP3002
TP2
TP3021
TP3003
TP1
P3902
TP5
TP6
TP4
TP3
TP7
R3955
R3953
R3954
Q3914
R3942
R3949
D3906
D3905
Q3915
R3946
R3947
QR3906
R3948
IC4901
R4922
R4919
R4920
R4923
R4921
R3962
R3961
R3917
JK3903
S-VIDEO OUT
IC3909
L4906
C4911
R4929
W1
R3943
R3944
R3945
QR3907
Q3905
Q3908
R4924
R4925
R3918
W4
W5
R4930
C4912
R4931
JK3901 AV1(TV)
R3950
QR3903
R3929
D3904
R3926
R4928
R4926
R4932
C4914
R3951
QR3904
K3901
S3902
TEST ON
TEST OFF
RF OFF
C3904
W11
JK3906
VIDEO OUT
IC3908
C4913
L4905
R3928
D3908
IC4902
D3907
IC3907
R3952
R3924
R3925
C3920
Q3912
R3937
QR3908
R3938
R3941
C3932
C3919
R3915
R3919
R3916
W10
S3901
S-VIDEO OUT
NORMAL
Q3911
R3939
R3940
Q3910
Q3909
D3903
QR3902
C3921
R3931
R3932
R3933
R3935
R3934
R3936
R3930
JK3904
EDIT 5P
JK4902
AUDIO OUT (L)
IC3901
R3921
L4907
R4912
R4911
IC4904
L4902
R4902
W3
C4908
JK3902 AV2(DECODER/EXT)
R3923
IC3906
R3960
C4905
R4909
R4908
C4906
R3958
C4902
C4907
R4916
R3911
D4901
C3933
R3959
C4901
JK4901
D3901
R4915
IC4903
R4903
C4903
C4904
L4901
C4910
C4909
R4918
L4903
R3913
K3904
R4904
C3902
C3901
AUDIO OUT (R)
L4904
R4917
R3912
L3905
R3922
R4914
QR3901
Q3904
C3905
R4901
C3918
D3902
C3917
R4907
R4906
R4905
R3914
R3920
W2
PS3901
PS3902
PS3903
PS3904

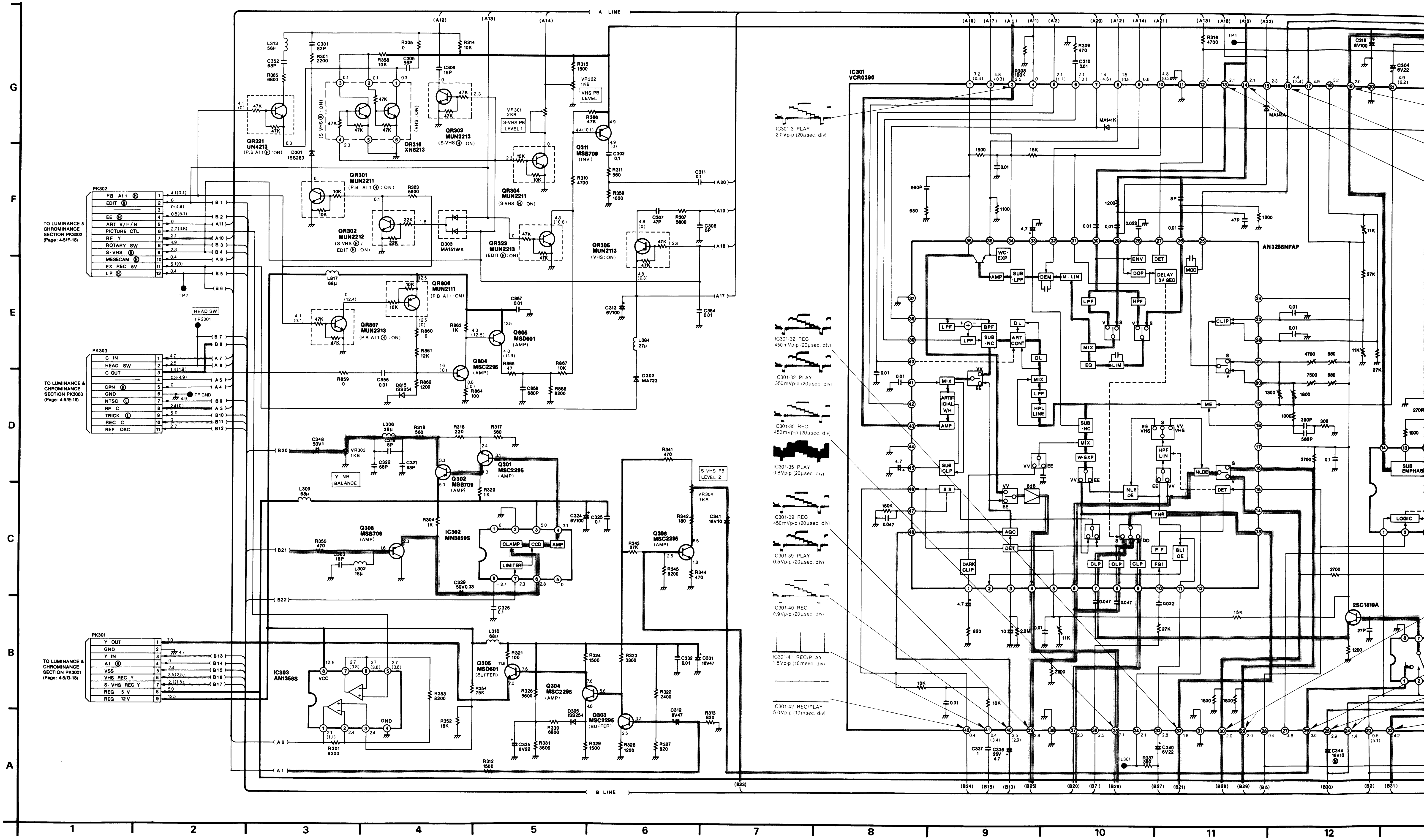
4-13. LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03B74A)

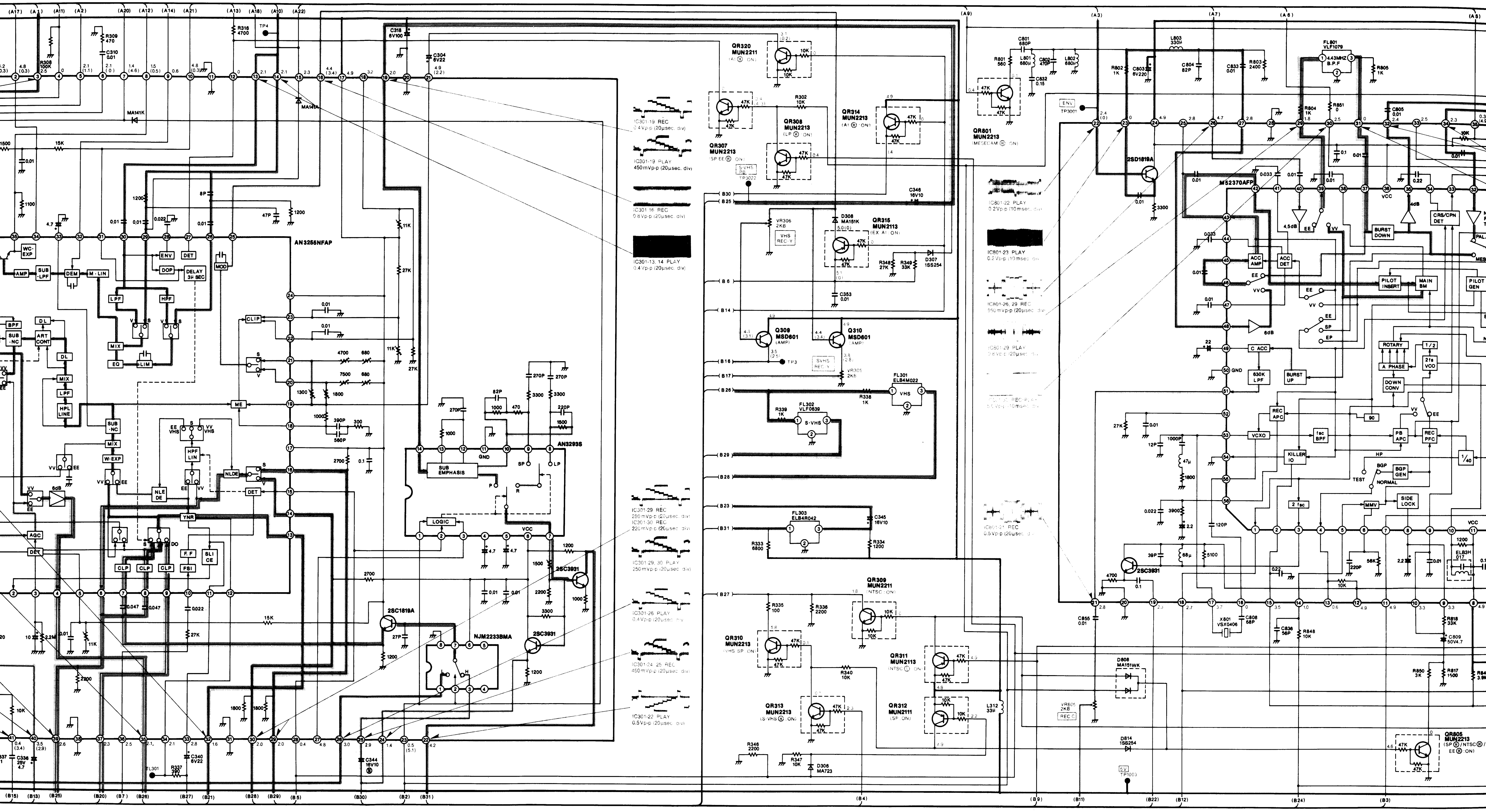
LUMINANCE & CHROMINANCE PACK C.B.A.	
Transistor	
Q301	C-1
Q302	C-1
Q303	A-1
Q304	A-1
Q305	A-2
Q309	C-2
Q310	C-4
Q311	B-2
Q803	C-5
Q804	B-6
Q805	B-7
Transistor & Resistor	
QR301	C-1
QR302	C-1
QR303	C-2
QR304	C-4
QR305	C-2
QR307	B-3
QR308	B-3
QR309	A-3
QR310	A-2
QR311	A-3
QR312	A-3
QR313	A-2
QR314	B-3
QR315	C-3
QR316	C-2
QR320	C-3
QR321	C-2
QR323	B-2
QR801	C-7
QR802	B-7
QR803	A-7
QR805	B-6
QR806	B-6
QR807	B-4
Integrated Circuit	
IC301	C-2
IC302	B-1
IC303	B-4
IC801	B-6
IC802	C-6
IC803	B-5
Test Point	
TL301	A-2
TL802	C-6
TL803	C-6
TP1	C-7
TP2	C-6
TP3	C-2
TP4	C-2
TP1003	C-7
TP2001	C-6
TP3001	C-6
TP3022	C-2
TPGND	C-5
Adjustment	
VR301	C-4
VR302	C-4
VR303	C-1
VR304	C-3
VR305	C-3
VR306	C-3
VR803	C-5
VR804	C-5
VR805	C-5
Connector	
PK301	A-2
PK302	A-4
PK303	A-6

ADDRESS INFORMATION


C
B
A
1
2
3
4
5
6
7
YNR BAL
S PB LEVEL
VHS REC Y
S-VHS PB LEVEL 2
S-VHS REC Y
VHS PB LEVEL
S-VHS PB LEVEL1
REC C
PB C LEVEL
GND
H SW
ENV
5V
AFC
S-VHS
VHS
TP3022
TP3
TP4
TPGND
TP2001
TP2
TP3001
TP1
TP1003
TL301
TL802
TL803
IC301
IC302
IC303
IC801
IC802
IC803
FL301
FL302
FL303
FL801
DL802
PK301
PK302
PK303
X801

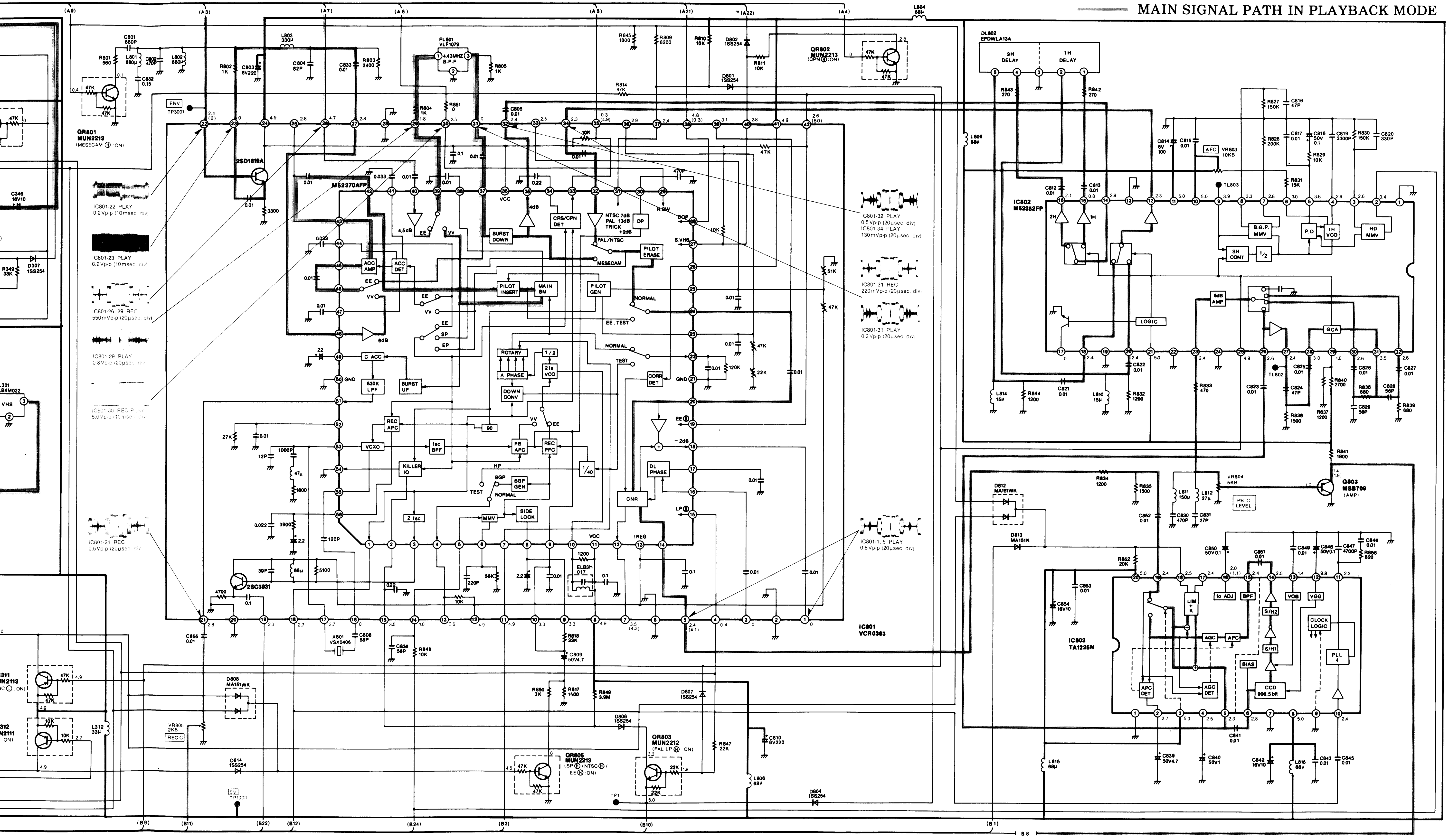
4-14. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM


A LINE
B LINE
PK302
PB AI1 Ⓗ
EDIT Ⓗ
EE Ⓗ
ART V/H/N
PICTURE CTL
RF Y
ROTARY SW
S-VHS Ⓗ
MESECAM Ⓗ
EX. REC 5V
LP Ⓗ
TO LUMINANCE & CHROMINANCE SECTION PK3002 (Page: 4-5/F-18)
TP2
HEAD SW
TP2001
PK303
C IN
HEAD SW
C OUT
CPN Ⓗ
GND
NTSC Ⓛ
RF C
TRICK Ⓛ
REC C
REF OSC
TO LUMINANCE & CHROMINANCE SECTION PK3003 (Page: 4-5/E-18)
TP GND
PK301
Y OUT
GND
Y IN
AI Ⓗ
VSS
VHS REC Y
S-VHS REC Y
REG 5V
REG 12V
TO LUMINANCE & CHROMINANCE SECTION PK3001 (Page: 4-5/G-18)
QR321 UN4213 (P.B AI1 Ⓗ :ON)
D301 1SS283
QR316 XN6213
QR303 MUN2213 (S-VHS Ⓗ :ON)
QR301 MUN2211 (P.B AI1 Ⓗ :ON)
QR302 MUN2212 (S-VHS Ⓛ / EDIT Ⓗ :ON)
D303 MA151WK
QR304 MUN2211 (S-VHS Ⓗ :ON)
QR323 MUN2213 (EDIT Ⓗ :ON)
Q311 MSB709 (INV.)
VR301 2KB S-VHS PB LEVEL 1
VR302 1KB VHS PB LEVEL
QR305 MUN2113 (VHS :ON)
QR806 MUN2111 (P.B AI1 :ON)
QR807 MUN2213 (P.B AI1 Ⓗ :ON)
Q805 MSD601 (AMP)
Q804 MSC2295 (AMP)
D815 1SS254
D302 MA723
VR303 1KB Y NR BALANCE
Q302 MSB709 (AMP)
Q301 MSC2295 (AMP)
Q308 MSB709 (AMP)
IC302 MN3859S
CLAMP
CCD
AMP
LIMITER
VR304 1KB S-VHS PB LEVEL 2
Q306 MSC2295 (AMP)
IC303 AN1358S
VCC
GND
Q305 MSD601 (BUFFER)
Q304 MSC2295 (AMP)
Q303 MSC2295 (BUFFER)
D305 1SS254
IC301 VCR0390
AN3256NFAP
MA141K
MA141A
2SC1819A
TP4
TL301
WC-EXP
AMP
SUB-LPF
DEM
M-LIN
ENV
DET
DOP
DELAY 3μ SEC
MOD
LPF
HPF
MIX
EQ
LIM
BPF
SUB-NC
DL
ART CONT
ARTIF ICIAL V/H
HPL LINE
CLIP
ME
SUB-NC
W-EXP
HPF LIN
NLDE
NLE DE
DET
S.S
SUB CLP
6dB
AGC
YNR
DARK CLIP
CLP
F.F
FSI
SLI CE
SUB EMPHAS
LOGIC
IC301-3 PLAY 2.0Vp-p (20μsec. div)
IC301-32 REC 450mVp-p (20μsec. div)
IC301-32 PLAY 350mVp-p (20μsec. div)
IC301-35 REC 450mVp-p (20μsec. div)
IC301-35 PLAY 0.8Vp-p (20μsec. div)
IC301-39 REC 450mVp-p (20μsec. div)
IC301-39 PLAY 0.5Vp-p (20μsec. div)
IC301-40 REC 0.9Vp-p (20μsec. div)
IC301-41 REC/PLAY 1.8Vp-p (10msec. div)
IC301-42 REC/PLAY 5.0Vp-p (10msec. div)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12


AN3255NFAP
AN3293S
NJM2233BMA
M52370AFP
2SC1819A
2SC3931
2SD1819A
QR320 MUN2211 (AI Ⓗ ON)
QR307 MUN2213 (SP EE Ⓗ ON)
QR308 MUN2213 (LP Ⓗ ON)
QR314 MUN2213 (AI Ⓗ ON)
QR315 MUN2113 (EX AI ON)
Q309 MSD601 (AMP)
Q310 MSD601 (AMP)
QR309 MUN2211 (NTSC ON)
QR310 MUN2213 (VHS SP ON)
QR311 MUN2113 (NTSC Ⓛ ON)
QR312 MUN2111 (SP ON)
QR313 MUN2213 (S-VHS Ⓗ ON)
QR801 MUN2213 (MESECAM Ⓗ ON)
QR805 MUN2213 (SP Ⓗ/NTSC Ⓗ/ EE Ⓗ ON)
FL301 ELB4M022
FL302 VLF0639
FL303 ELB4R042
FL801 VLF1079 4.43MHZ B.P.F
X801 VSX0406
VR305 2KB
VR306 2KB
VR805 2KB
D307 1SS254
D308 MA151K
D306 MA723
D808 MA151WK
D814 1SS254
L803 330μ
L312 33μ
TP4
TP3
TP1003
TP3001
TP3022
TL301
IC301-19 REC
0.4Vp-p (20μsec. div)
IC301-19 PLAY
450mVp-p (20μsec. div)
IC301-16 REC
0.8Vp-p (20μsec. div)
IC301-13, 14 PLAY
0.4Vp-p (20μsec. div)
IC301-29 REC
250mVp-p (20μsec. div)
IC301-30 REC
220mVp-p (20μsec. div)
IC301-29, 30 PLAY
250mVp-p (20μsec. div)
IC301-26 PLAY
0.4Vp-p (20μsec. div)
IC301-24, 25 REC
450mVp-p (20μsec. div)
IC301-22 PLAY
0.5Vp-p (20μsec. div)
IC801-22 PLAY
0.2Vp-p (10msec. div)
IC801-23 PLAY
0.2Vp-p (10msec. div)
IC801-26, 29 REC
550mVp-p (20μsec. div)
IC801-29 PLAY
0.8Vp-p (20μsec. div)
IC801-30 REC/PLAY
5.0Vp-p (10msec. div)
IC801-21 REC
0.5Vp-p (20μsec. div)
SUB EMPHASIS
LOGIC
CLIP
ME
NLDE
DET
YNR
F.F
FSI
SLICE
CLP
AGC
WC-EXP
AMP
SUB LPF
DEM
M-LIN
ENV
DOP
DELAY 3μ SEC
MOD
LPF
HPF
MIX
EQ
LIM
BPF
SUB-NC
DL
ART CONT
HPL LINE
W-EXP
NLE DE
HPF LIN
ACC AMP
ACC DET
BURST DOWN
CRS/CPN DET
PILOT INSERT
MAIN BM
PILOT GEN
C ACC
630K LPF
BURST UP
ROTARY
1/2
A PHASE
2fs VCO
DOWN CONV
REC APC
VCXO
fsc BPF
PB APC
REC PFC
KILLER IO
BGP GEN
2 fsc
MMV
SIDE LOCK
1/40
TEST
NORMAL
S-VHS REC-Y
VHS REC-Y
(A17) (A1) (A11) (A2) (A20) (A12) (A14) (A21) (A13) (A18) (A10) (A22) (A9) (A3) (A7) (A6) (A5)
(B15) (B13) (B25) (B20) (B7) (B26) (B27) (B21) (B28) (B29) (B5) (B30) (B2) (B31) (B4) (B9) (B11) (B22) (B12) (B24) (B3)
9 10 11 12 13 14 15 16 17 18 19 20 21

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE


IC801 VCR0383
M52370AFP
IC802 M52352FP
IC803 TA1225N
QR801 MUN2213 (MESECAM Ⓗ: ON)
QR802 MUN2213 (CPN Ⓗ: ON)
QR803 MUN2212 (PAL LP Ⓗ: ON)
QR805 MUN2213 (SP Ⓗ/NTSC Ⓗ/EE Ⓗ: ON)
Q803 MSB709 (AMP)
2SD1819A
2SC3931
FL801 VLF1079 4.43MHz B.P.F
DL802 EFDWLA13A
2H DELAY
1H DELAY
X801 VSX0406
ELB3H 017
IC801-22 PLAY 0.2Vp-p (10msec. div)
IC801-23 PLAY 0.2Vp-p (10msec. div)
IC801-26, 29 REC 550mVp-p (20μsec. div)
IC801-29 PLAY 0.8Vp-p (20μsec. div)
IC801-30 REC-PLAY 5.0Vp-p (10msec. div)
IC801-21 REC 0.5Vp-p (20μsec. div)
IC801-32 PLAY 0.5Vp-p (20μsec. div)
IC801-34 PLAY 130mVp-p (20μsec. div)
IC801-31 REC 220mVp-p (20μsec. div)
IC801-31 PLAY 0.2Vp-p (20μsec. div)
IC801-1, 5 PLAY 0.8Vp-p (20μsec. div)
ACC AMP
ACC DET
C ACC
630K LPF
BURST UP
BURST DOWN
PILOT INSERT
MAIN BM
PILOT GEN
PILOT ERASE
CRS/CPN DET
NTSC 7dB PAL 13dB TRICK +2dB
DP
PAL/NTSC
MESECAM
ROTARY
1/2
2fs VCO
A PHASE
DOWN CONV
REC APC
VCXO
fsc BPF
KILLER IO
PB APC
REC PFC
1/40
BGP GEN
2 fsc
MMV
SIDE LOCK
CORR DET
DL PHASE
CNR
EE.TEST
NORMAL
TEST
EE Ⓗ
LP Ⓗ
S.VHS Ⓗ
DOP
R.SW
VCC
GND
IREG
HP
BGP
B.G.P. MMV
SH CONT
P.D
1H VCO
HD MMV
6dB AMP
LOGIC
GCA
AFC VR803 10KB
TL803
TL802
PB C LEVEL
fo ADJ
BPF
LIM + K
AGC
APC
S/H2
S/H1
VOB
VGG
CLOCK LOGIC
PLL 4
BIAS
CCD 906.5 bit
APC DET
AGC DET
VR804 5KB
VR805 2KB REC C
ENV TP3001
5V TP1003
TP1
D801 1SS254
D802 1SS254
D804 1SS254
D806 1SS254
D807 1SS254
D808 MA151WK
D812 MA151WK
D813 MA151K
D814 1SS254
(A9)
(A3)
(A7)
(A6)
(A5)
(A21)
(A22)
(A4)
(B9)
(B11)
(B22)
(B12)
(B24)
(B3)
(B10)
(B1)
B8

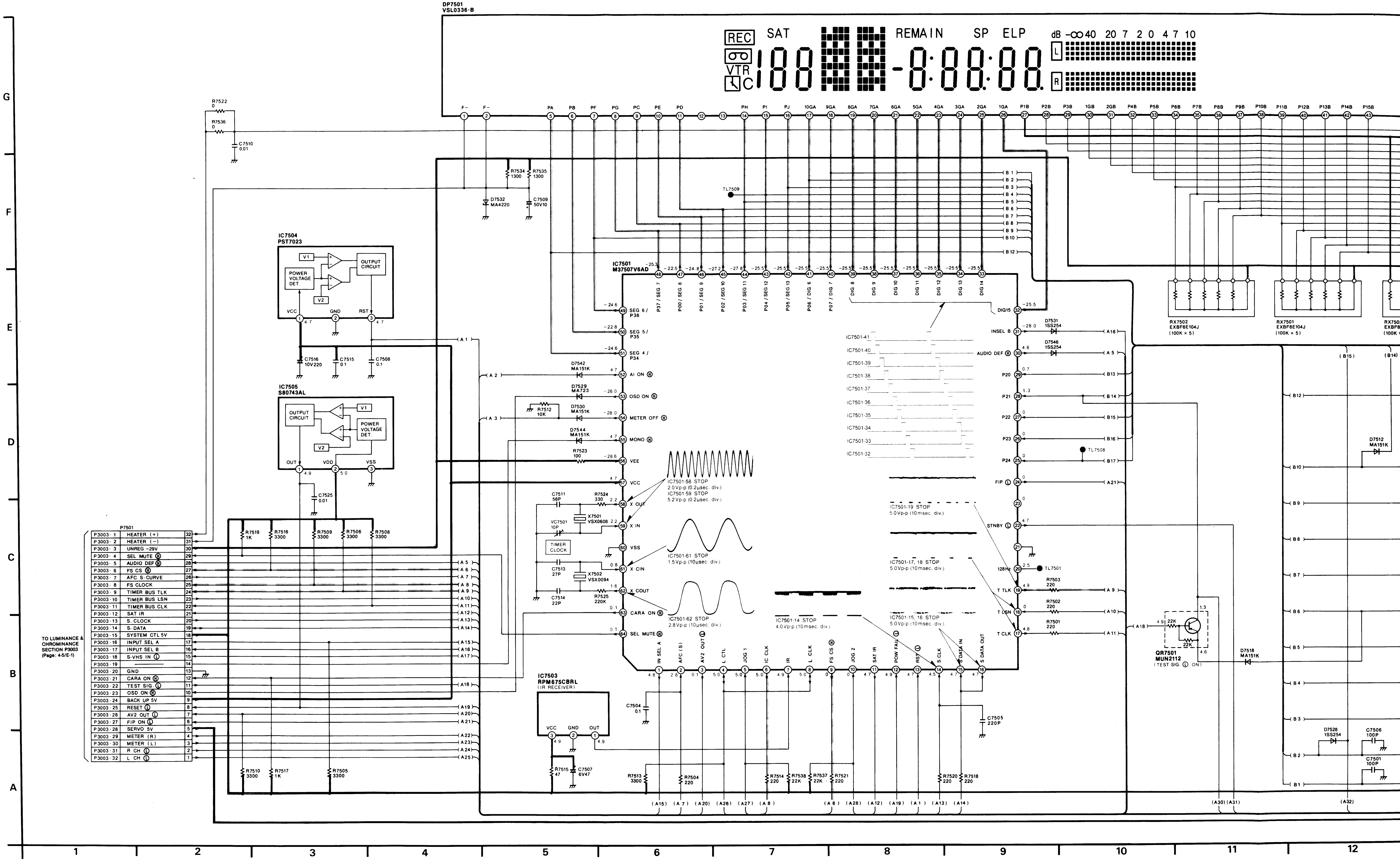
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

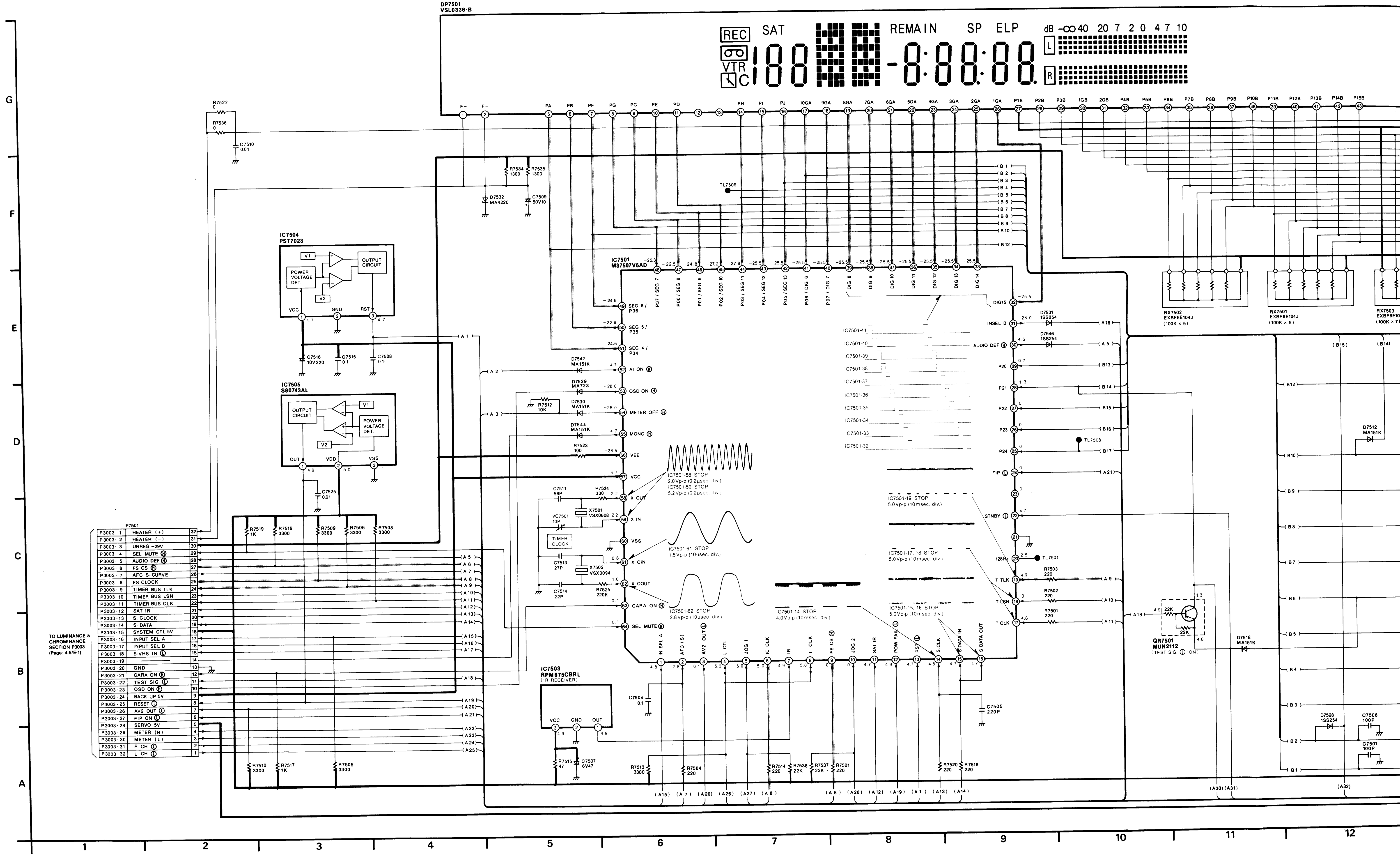
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

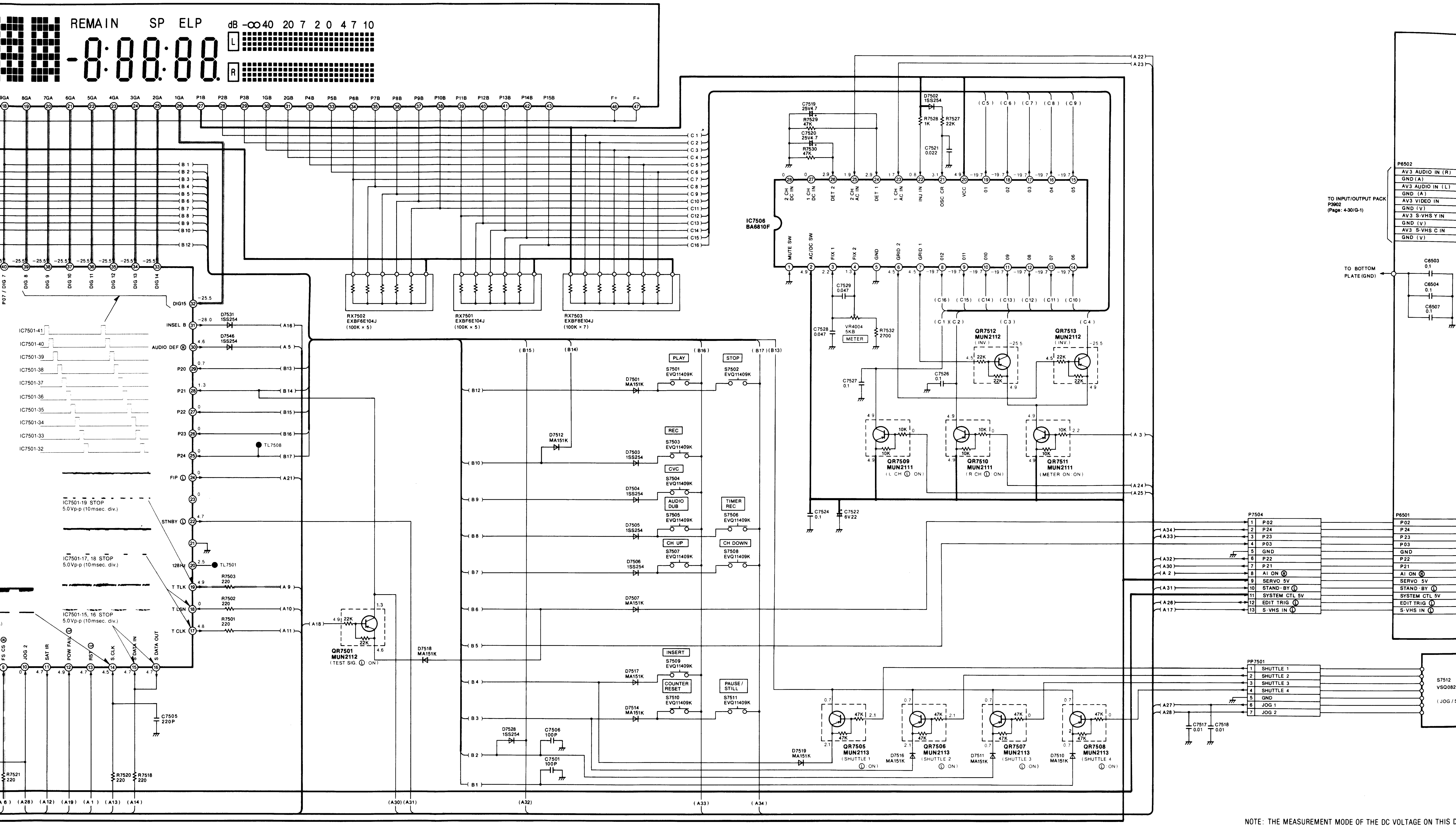
17	18	19	20	21	22	23	24	25	26	27	28

4-15. TIMER & VR SCHEMATIC DIAGRAM

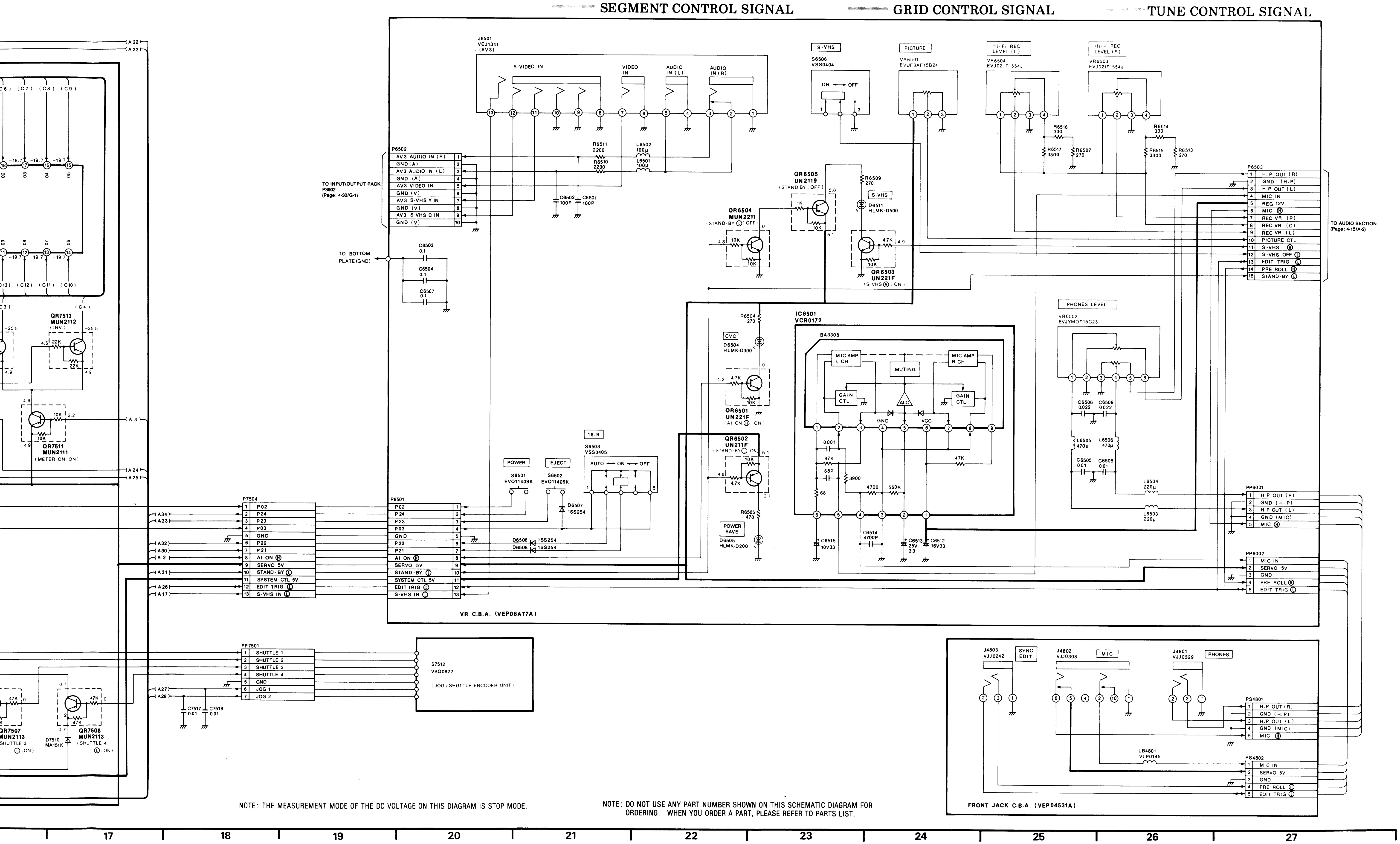

DP7501
VSL0336-B
REC SAT REMAIN SP ELP
dB -∞ 40 20 7 2 0 4 7 10
VTR
L
R
IC7501
M37507V6AD
IC7504
PST7023
POWER VOLTAGE DET.
OUTPUT CIRCUIT
V1
V2
VCC GND RST
IC7505
S80743AL
OUT VDD VSS
IC7503
RPM675CBRL
(IR RECEIVER)
VCC GND OUT
X7501
VSX0608
X7502
VSX0094
TIMER CLOCK
QR7501
MUN2112
(TEST SIG. Ⓛ ON)
RX7502
EXBF6E104J
(100K × 5)
RX7501
EXBF6E104J
(100K × 5)
TL7509
TL7508
TL7501
IC7501-58 STOP
2.0Vp-p (0.2μsec. div.)
IC7501-59 STOP
5.2Vp-p (0.2μsec. div.)
IC7501-61 STOP
1.5Vp-p (10μsec. div.)
IC7501-62 STOP
2.8Vp-p (10μsec. div.)
IC7501-14 STOP
4.0Vp-p (10msec. div.)
IC7501-19 STOP
5.0Vp-p (10msec. div.)
IC7501-17, 18 STOP
5.0Vp-p (10msec. div.)
IC7501-15, 16 STOP
5.0Vp-p (10msec. div.)
SEG 6 / P36
SEG 5 / P35
SEG 4 / P34
AI ON Ⓗ
OSD ON Ⓗ
METER OFF Ⓗ
MONO Ⓗ
VEE
VCC
X OUT
X IN
VSS
X CIN
X COUT
CARA ON Ⓗ
SEL MUTE Ⓗ
DIG15
INSEL B
AUDIO DEF Ⓗ
P20
P21
P22
P23
P24
FIP Ⓛ
STNBY Ⓛ
128Hz
T TLK
T LSN
T CLK
IN SEL A
AFC (S)
AV2 OUT Ⓛ
L CTL
JOG 1
IC CLK
IR
L CLK
FS CS Ⓗ
JOG 2
SAT IR
POW FAIL Ⓛ
RST Ⓛ
S.CLK
S.DATA IN
S.DATA OUT
P7501
P3003-1 HEATER (+) 32
P3003-2 HEATER (−) 31
P3003-3 UNREG −29V 30
P3003-4 SEL MUTE Ⓗ 29
P3003-5 AUDIO DEF Ⓗ 28
P3003-6 FS CS Ⓗ 27
P3003-7 AFC S-CURVE 26
P3003-8 FS CLOCK 25
P3003-9 TIMER BUS TLK 24
P3003-10 TIMER BUS LSN 23
P3003-11 TIMER BUS CLK 22
P3003-12 SAT IR 21
P3003-13 S. CLOCK 20
P3003-14 S. DATA 19
P3003-15 SYSTEM CTL 5V 18
P3003-16 INPUT SEL A 17
P3003-17 INPUT SEL B 16
P3003-18 S-VHS IN Ⓛ 15
P3003-19 14
P3003-20 GND 13
P3003-21 CARA ON Ⓗ 12
P3003-22 TEST SIG. Ⓛ 11
P3003-23 OSD ON Ⓗ 10
P3003-24 BACK UP 5V 9
P3003-25 RESET Ⓛ 8
P3003-26 AV2 OUT Ⓛ 7
P3003-27 FIP ON Ⓛ 6
P3003-28 SERVO 5V 5
P3003-29 METER (R) 4
P3003-30 METER (L) 3
P3003-31 R CH Ⓛ 2
P3003-32 L CH Ⓛ 1
TO LUMINANCE & CHROMINANCE SECTION P3003 (Page: 4-5/E-1)
G
F
E
D
C
B
A
1 2 3 4 5 6 7 8 9 10 11 12

4-15. TIMER & VR SCHEMATIC DIAGRAM


DP7501
VSL0336-B
REC SAT REMAIN SP ELP
dB -∞ 40 20 7 2 0 4 7 10
VTR
IC7501
M37507V6AD
IC7504
PST7023
POWER VOLTAGE DET.
OUTPUT CIRCUIT
V1
V2
VCC GND RST
IC7505
S80743AL
OUT VDD VSS
IC7503
RPM675CBRL
(IR RECEIVER)
VCC GND OUT
P7501
P3003-1 HEATER (+) 32
P3003-2 HEATER (−) 31
P3003-3 UNREG −29V 30
P3003-4 SEL MUTE Ⓗ 29
P3003-5 AUDIO DEF Ⓗ 28
P3003-6 FS CS Ⓗ 27
P3003-7 AFC S-CURVE 26
P3003-8 FS CLOCK 25
P3003-9 TIMER BUS TLK 24
P3003-10 TIMER BUS LSN 23
P3003-11 TIMER BUS CLK 22
P3003-12 SAT IR 21
P3003-13 S. CLOCK 20
P3003-14 S. DATA 19
P3003-15 SYSTEM CTL 5V 18
P3003-16 INPUT SEL A 17
P3003-17 INPUT SEL B 16
P3003-18 S-VHS IN Ⓛ 15
P3003-19 14
P3003-20 GND 13
P3003-21 CARA ON Ⓗ 12
P3003-22 TEST SIG. Ⓛ 11
P3003-23 OSD ON Ⓗ 10
P3003-24 BACK UP 5V 9
P3003-25 RESET Ⓛ 8
P3003-26 AV2 OUT Ⓛ 7
P3003-27 FIP ON Ⓛ 6
P3003-28 SERVO 5V 5
P3003-29 METER (R) 4
P3003-30 METER (L) 3
P3003-31 R CH Ⓛ 2
P3003-32 L CH Ⓛ 1
TO LUMINANCE & CHROMINANCE SECTION P3003 (Page: 4-5/E-1)
SEG 6 / P36
SEG 5 / P35
SEG 4 / P34
AI ON Ⓗ
OSD ON Ⓗ
METER OFF Ⓗ
MONO Ⓗ
VEE
VCC
X OUT
X IN
VSS
X CIN
X COUT
CARA ON Ⓗ
SEL MUTE Ⓗ
DIG15
INSEL B
AUDIO DEF Ⓗ
P20 P21 P22 P23 P24
FIP Ⓛ
STNBY Ⓛ
128Hz
T TLK
T LSN
T CLK
IN SEL A
AFC S Ⓛ
AV2 OUT Ⓛ
L CTL
JOG 1
IC CLK
IR
L CLK
FS CS Ⓗ
JOG 2
SAT IR
POW FAIL Ⓛ
RST Ⓛ
S CLK
S DATA IN
S DATA OUT
TIMER CLOCK
X7501 VSX0608
X7502 VSX0094
VC7501 10P
IC7501-58 STOP 2.0Vp-p (0.2μsec. div.)
IC7501-59 STOP 5.2Vp-p (0.2μsec. div.)
IC7501-61 STOP 1.5Vp-p (10μsec. div.)
IC7501-62 STOP 2.8Vp-p (10μsec. div.)
IC7501-14 STOP 4.0Vp-p (10msec. div.)
IC7501-19 STOP 5.0Vp-p (10msec. div.)
IC7501-17, 18 STOP 5.0Vp-p (10msec. div.)
IC7501-15, 16 STOP 5.0Vp-p (10msec. div.)
IC7501-41 IC7501-40 IC7501-39 IC7501-38 IC7501-37 IC7501-36 IC7501-35 IC7501-34 IC7501-33 IC7501-32
TL7509 TL7508 TL7501
RX7502 EXBF6E104J (100K × 5)
RX7501 EXBF6E104J (100K × 5)
RX7503 EXBF8E10
QR7501 MUN2112 (TEST SIG. Ⓛ ON)
D7531 1SS254
D7546 1SS254
D7542 MA151K
D7529 MA723
D7530 MA151K
D7544 MA151K
D7532 MA4220
D7512 MA151K
D7518 MA151K
D7528 1SS254
R7522 0
R7536 0
C7510 0.01
R7534 1300
R7535 1300
C7509 50V10
C7516 10V220
C7515 0.1
C7508 0.1
C7525 0.01
R7512 10K
R7523 100
C7511 56P
R7524 330
C7513 27P
C7514 22P
R7525 220K
R7519 1K
R7516 3300
R7509 3300
R7506 3300
R7508 3300
R7510 3300
R7517 1K
R7505 3300
R7515 47
C7507 6V47
C7504 0.1
R7513 3300
R7504 220
R7514 220
R7538 22K
R7537 22K
R7521 220
R7520 220
R7518 220
C7505 220P
R7503 220
R7502 220
R7501 220
C7506 100P
C7501 100P
G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12


REMAIN
SP
ELP
dB -∞ 40 20 7 2 0 4 7 10
-8:88:88
L
R
IC7506
BA6810F
MUTE SW
AC/DC SW
FIX 1
FIX 2
GND
GRID 2
GRID 1
2 CH DC IN
1 CH DC IN
DET 2
2 CH AC IN
DET 1
1 CH AC IN
INJ IN
OSC CR
VCC
RX7502
EXBF6E104J
(100K × 5)
RX7501
EXBF6E104J
(100K × 5)
RX7503
EXBF6E104J
(100K × 7)
QR7512
MUN2112
QR7513
MUN2112
QR7509
MUN2111
(L CH Ⓛ ON)
QR7510
MUN2111
(R CH Ⓛ ON)
QR7511
MUN2111
(METER ON:ON)
VR4004
5KB
METER
QR7501
MUN2112
(TEST SIG. Ⓛ ON)
PLAY
STOP
REC
CVC
AUDIO DUB
TIMER REC
CH UP
CH DOWN
INSERT
COUNTER RESET
PAUSE/STILL
S7501 EVQ11409K
S7502 EVQ11409K
S7503 EVQ11409K
S7504 EVQ11409K
S7505 EVQ11409K
S7506 EVQ11409K
S7507 EVQ11409K
S7508 EVQ11409K
S7509 EVQ11409K
S7510 EVQ11409K
S7511 EVQ11409K
QR7505 MUN2113 (SHUTTLE 1 Ⓛ ON)
QR7506 MUN2113 (SHUTTLE 2 Ⓛ ON)
QR7507 MUN2113 (SHUTTLE 3 Ⓛ ON)
QR7508 MUN2113 (SHUTTLE 4 Ⓛ ON)
DIG15
INSEL B
AUDIO DEF Ⓗ
P20
P21
P22
P23
P24
FIP Ⓛ
STNBY Ⓛ
128Hz
T TLK
T LSN
T CLK
TL7508
TL7501
FS CS
JOG 2
SAT IR
POW FAIL
RST
S.CLK
S DATA IN
S DATA OUT
IC7501-19 STOP
5.0Vp-p (10msec. div.)
IC7501-17, 18 STOP
5.0Vp-p (10msec. div.)
IC7501-15, 16 STOP
5.0Vp-p (10msec. div.)
TO INPUT/OUTPUT PACK
P3902
(Page: 4-30/G-1)
P6502
AV3 AUDIO IN (R)
GND (A)
AV3 AUDIO IN (L)
GND (A)
AV3 VIDEO IN
GND (V)
AV3 S-VHS Y IN
GND (V)
AV3 S-VHS C IN
GND (V)
TO BOTTOM PLATE (GND)
P7504
P6501
P02
P24
P23
P03
GND
P22
P21
AI ON Ⓗ
SERVO 5V
STAND-BY Ⓛ
SYSTEM CTL 5V
EDIT TRIG Ⓛ
S-VHS IN Ⓛ
PP7501
SHUTTLE 1
SHUTTLE 2
SHUTTLE 3
SHUTTLE 4
GND
JOG 1
JOG 2
S7512
VSQ082
(JOG/S

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS D

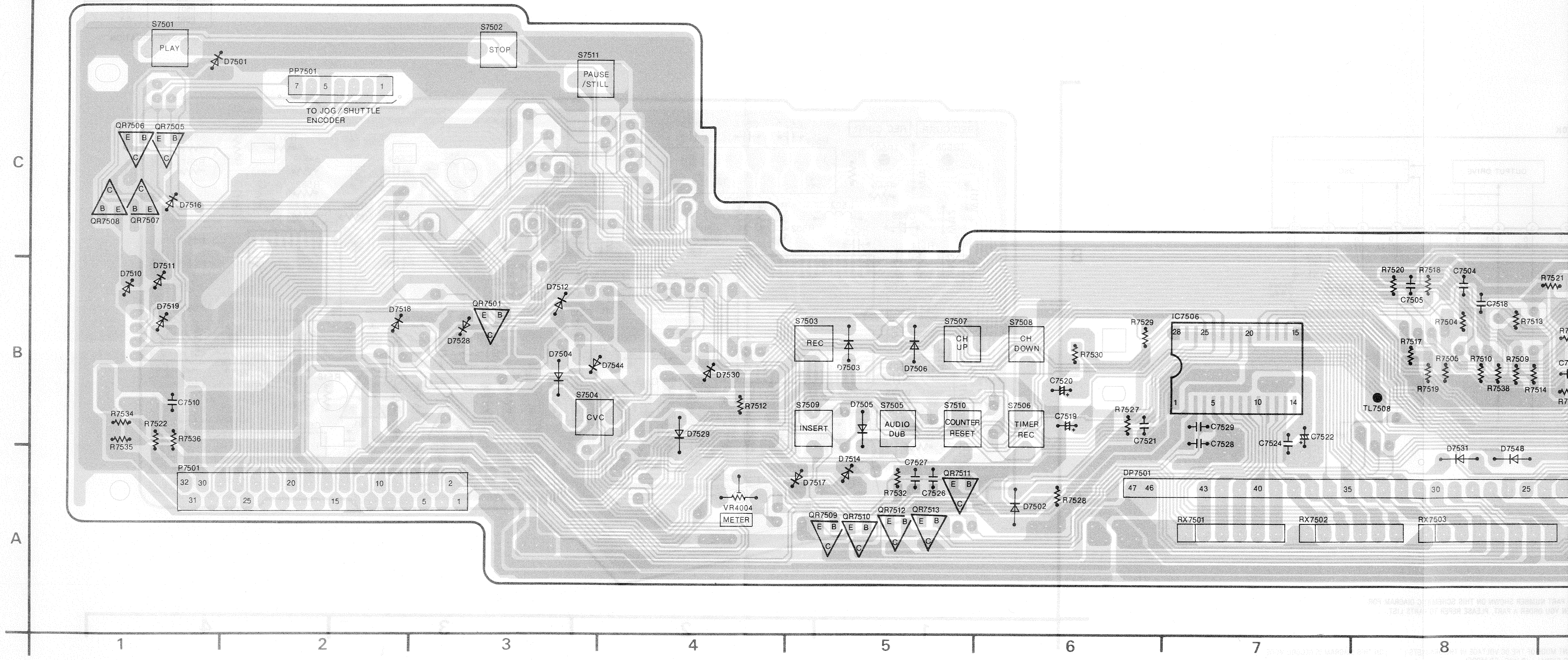

SEGMENT CONTROL SIGNAL
GRID CONTROL SIGNAL
TUNE CONTROL SIGNAL
J6501
VEJ1341
(AV3)
S-VIDEO IN
VIDEO IN
AUDIO IN (L)
AUDIO IN (R)
S-VHS
S6506
VSS0404
ON ← OFF
PICTURE
VR6501
EVUF3AF15B24
Hi-Fi REC LEVEL (L)
VR6504
EVJ021F1554J
Hi-Fi REC LEVEL (R)
VR6503
EVJ021F1554J
R6516 330
R6517 3300
R6507 270
R6514 330
R6515 3300
R6513 270
P6502
AV3 AUDIO IN (R)
GND (A)
AV3 AUDIO IN (L)
GND (A)
AV3 VIDEO IN
GND (V)
AV3 S-VHS Y IN
GND (V)
AV3 S-VHS C IN
GND (V)
TO INPUT/OUTPUT PACK P3902 (Page: 4-30/G-1)
R6511 2200
R6510 2200
L6502 100µ
L6501 100µ
C6502 100P
C6501 100P
TO BOTTOM PLATE (GND)
C6503 0.1
C6504 0.1
C6507 0.1
QR6505 UN2119 (STAND-BY: OFF)
R6509 270
S-VHS
D6511 HLMK-D500
QR6504 MUN2211 (STAND-BY Ⓛ: OFF)
QR6503 UN221F (S-VHS Ⓗ: ON)
P6503
H.P OUT (R)
GND (H.P)
H.P OUT (L)
MIC IN
REG 12V
MIC Ⓗ
REC VR (R)
REC VR (C)
REC VR (L)
PICTURE CTL
S-VHS Ⓗ
S-VHS OFF Ⓛ
EDIT TRIG Ⓛ
PRE ROLL Ⓗ
STAND-BY Ⓛ
TO AUDIO SECTION (Page: 4-15/A-2)
R6504 270
CVC
D6504 HLMK-D300
QR6501 UN221F (AI ON Ⓗ: ON)
QR6502 UN211F (STAND-BY Ⓛ: ON)
R6505 470
POWER SAVE
D6505 HLMK-D200
IC6501 VCR0172
BA3308
MIC AMP L CH
MIC AMP R CH
MUTING
GAIN CTL
ALC
GND
VCC
0.001
47K
68P
3900
68
4700
560K
C6515 10V33
C6514 4700P
C6513 25V 3.3
C6512 16V33
PHONES LEVEL
VR6502
EVJYM0F15C23
C6506 0.022
C6509 0.022
L6505 470µ
L6506 470µ
C6505 0.01
C6508 0.01
L6504 220µ
L6503 220µ
PP6001
H.P OUT (R)
GND (H.P)
H.P OUT (L)
GND (MIC)
MIC Ⓗ
PP6002
MIC IN
SERVO 5V
GND
PRE ROLL Ⓗ
EDIT TRIG Ⓛ
16:9
S6503
VSS0405
AUTO ↔ ON ↔ OFF
POWER
S6501 EVQ11409K
EJECT
S6502 EVQ11409K
D6507 1SS254
D6506 1SS254
D6508 1SS254
P7504
P6501
P02
P24
P23
P03
GND
P22
P21
AI ON Ⓗ
SERVO 5V
STAND-BY Ⓛ
SYSTEM CTL 5V
EDIT TRIG Ⓛ
S-VHS IN Ⓛ
VR C.B.A. (VEP06A17A)
PP7501
SHUTTLE 1
SHUTTLE 2
SHUTTLE 3
SHUTTLE 4
GND
JOG 1
JOG 2
C7517 0.01
C7518 0.01
S7512
VSQ0822
(JOG/SHUTTLE ENCODER UNIT)
QR7513 MUN2112 (INV.)
QR7511 MUN2111 (METER ON: ON)
QR7507 MUN2113 SHUTTLE 3 Ⓛ: ON
QR7508 MUN2113 (SHUTTLE 4 Ⓛ: ON)
D7510 MA151K
A22
A23
A3
A24
A25
A34
A33
A32
A30
A2
A31
A28
A17
A27
A28
J4803 VJJ0242
SYNC EDIT
J4802 VJJ0308
MIC
J4801 VJJ0329
PHONES
LB4801 VLP0145
PS4801
H.P OUT (R)
GND (H.P)
H.P OUT (L)
GND (MIC)
MIC Ⓗ
PS4802
MIC IN
SERVO 5V
GND
PRE ROLL Ⓗ
EDIT TRIG Ⓛ
FRONT JACK C.B.A. (VEP04531A)
17
18
19
20
21
22
23
24
25
26
27

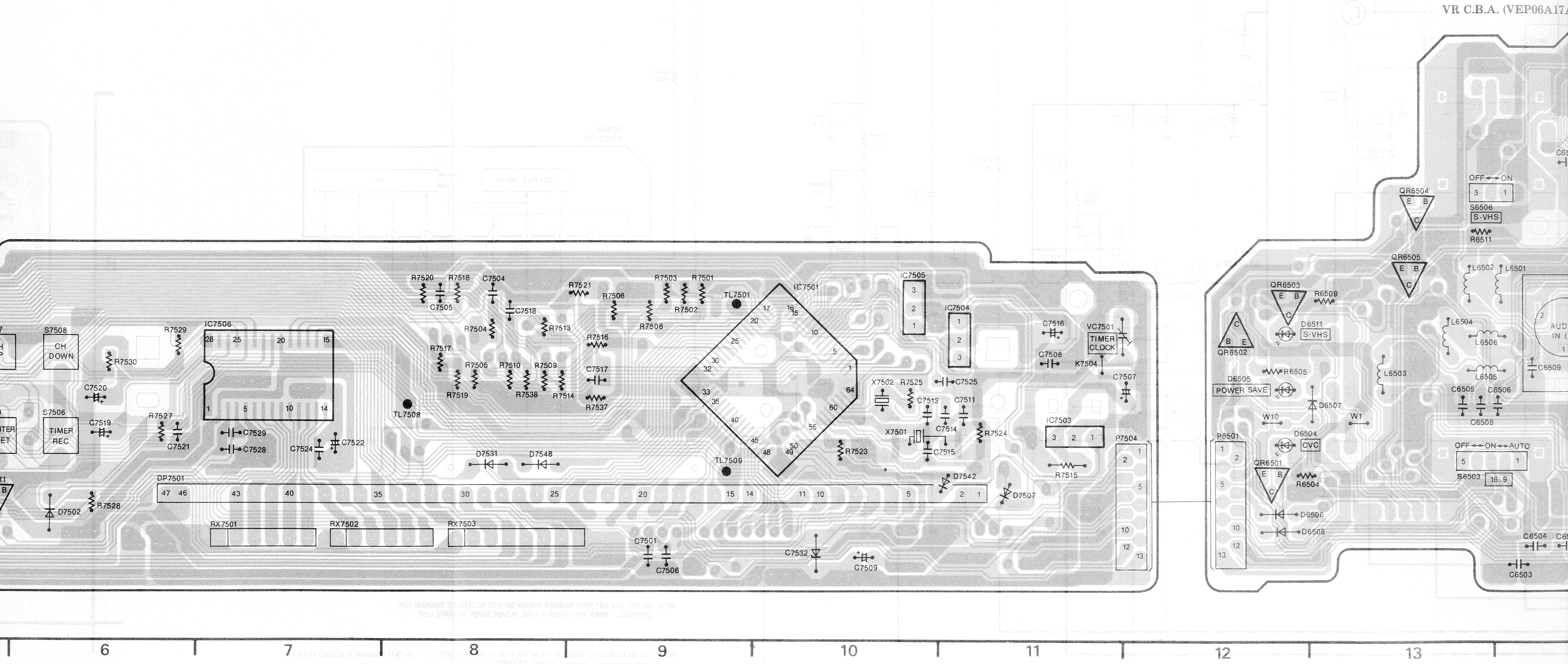
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-16. TIMER C.B.A. (VEP07808A) & VR C.B.A. (VEP06A17A)

TIMER C.B.A. (VEP07808A)


S7501
PLAY
D7501
S7502
STOP
S7511
PAUSE /STILL
PP7501
7
5
1
TO JOG / SHUTTLE ENCODER
QR7506
QR7505
E
B
C
QR7508
QR7507
D7516
D7510
D7511
D7519
D7518
D7528
QR7501
D7512
D7504
D7544
S7504
CVC
D7530
R7512
D7529
C7510
R7534
R7535
R7522
R7536
P7501
32
30
20
10
2
31
25
15
5
1
S7503
REC
D7503
D7506
S7507
CH UP
S7508
CH DOWN
R7530
S7509
INSERT
D7505
S7505
AUDIO DUB
S7510
COUNTER RESET
S7506
TIMER REC
C7520
C7519
D7514
D7517
C7527
C7526
R7532
QR7511
VR4004
METER
QR7509
QR7510
QR7512
QR7513
D7502
R7528
R7529
R7527
C7521
IC7506
28
25
20
15
1
5
10
14
C7529
C7528
C7524
C7522
TL7508
R7520
R7518
C7504
C7505
C7518
R7521
R7504
R7513
R7517
R7505
R7510
R7509
R7519
R7538
R7514
D7531
D7548
DP7501
47
46
43
40
35
30
25
RX7501
RX7502
RX7503
C
B
A
1
2
3
4
5
6
7
8


VR C.B.A. (VEP06A17
S7508
CH DOWN
S7506
TIMER REC
R7529
R7530
C7520
C7519
R7527
C7521
IC7506
C7529
C7528
C7524
C7522
TL7508
R7520
R7518
C7504
C7505
C7518
R7504
R7513
R7517
R7505
R7510
R7509
R7519
R7538
R7514
R7521
R7506
R7516
C7517
R7537
R7503
R7501
R7502
R7508
TL7501
IC7501
TL7509
IC7505
IC7504
X7502
R7525
C7525
C7513
C7511
C7514
X7501
C7515
R7524
R7523
C7516
C7508
VC7501
TIMER CLOCK
K7504
C7507
IC7503
R7515
P7504
D7531
D7548
D7542
D7507
DP7501
D7502
R7528
RX7501
RX7502
RX7503
C7501
C7506
C7532
C7509
QR6504
S6506
S-VHS
OFF↔ON
R6511
QR6505
QR6503
R6509
QR6502
D6511
S-VHS
D6505
POWER SAVE
R6505
D6507
W10
W1
D6504
CVC
P6501
QR6501
R6504
D6506
D6508
L6502
L6501
L6504
L6506
L6503
L6505
C6509
C6505
C6506
C6508
S6503
OFF↔ON↔AUTO
16:9
C6504
C6503
AUD IN
6
7
8
9
10
11
12
13

TIMER C.B.A. & VR C.B.A.

Transistor & Resistor	
QR6501	A-12
QR6502	B-12
QR6503	B-12
QR6504	C-13
QR6505	C-13
QR7501	B-3
QR7505	C-1
QR7506	C-1
QR7507	C-1
QR7508	C-1
QR7509	A-5
QR7510	A-5
QR7511	A-5
QR7512	A-5
QR7513	A-5

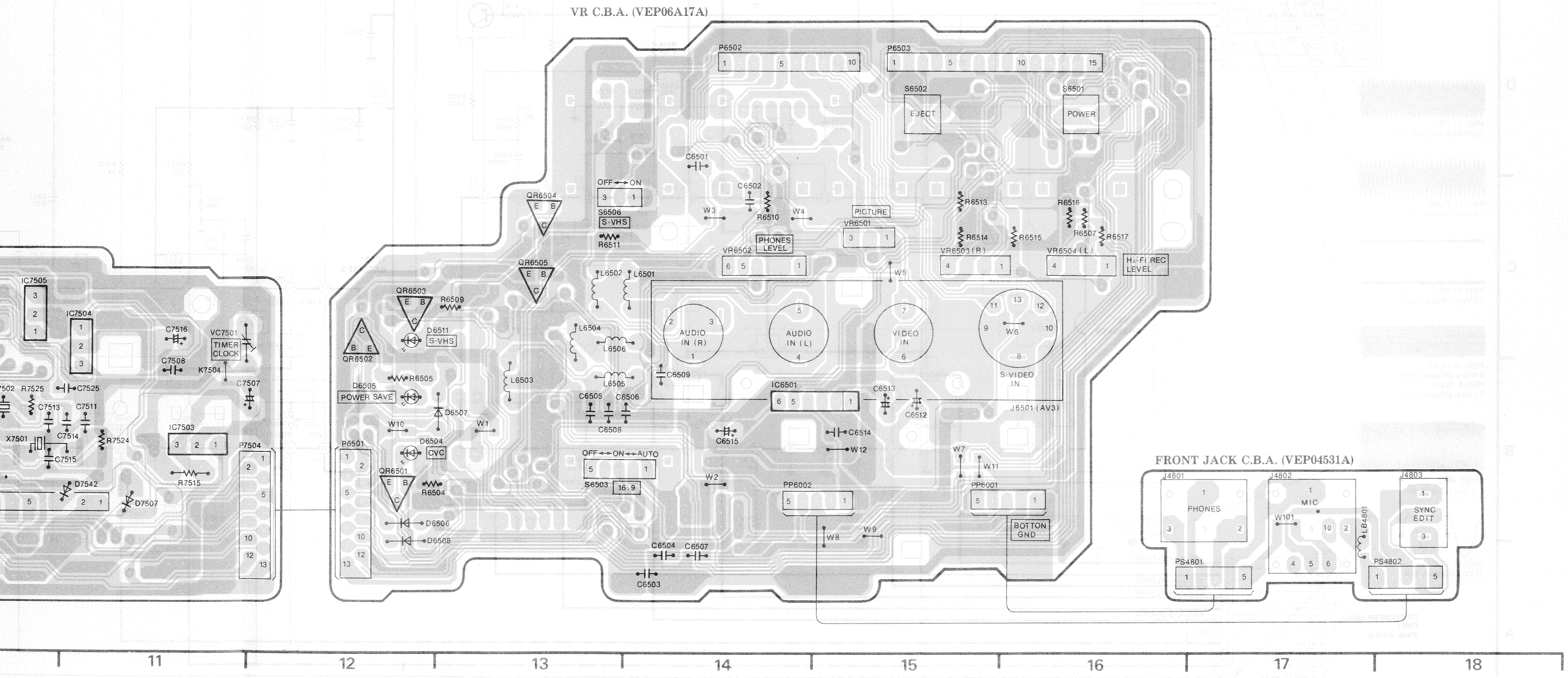
Integrated Circuit	
IC6501	B-14
IC7501	B-10
IC7503	B-11
IC7504	B-11
IC7505	B-10
IC7506	B-7

Test Point	
TL7501	B-9
TL7508	B-8
TL7509	A-9

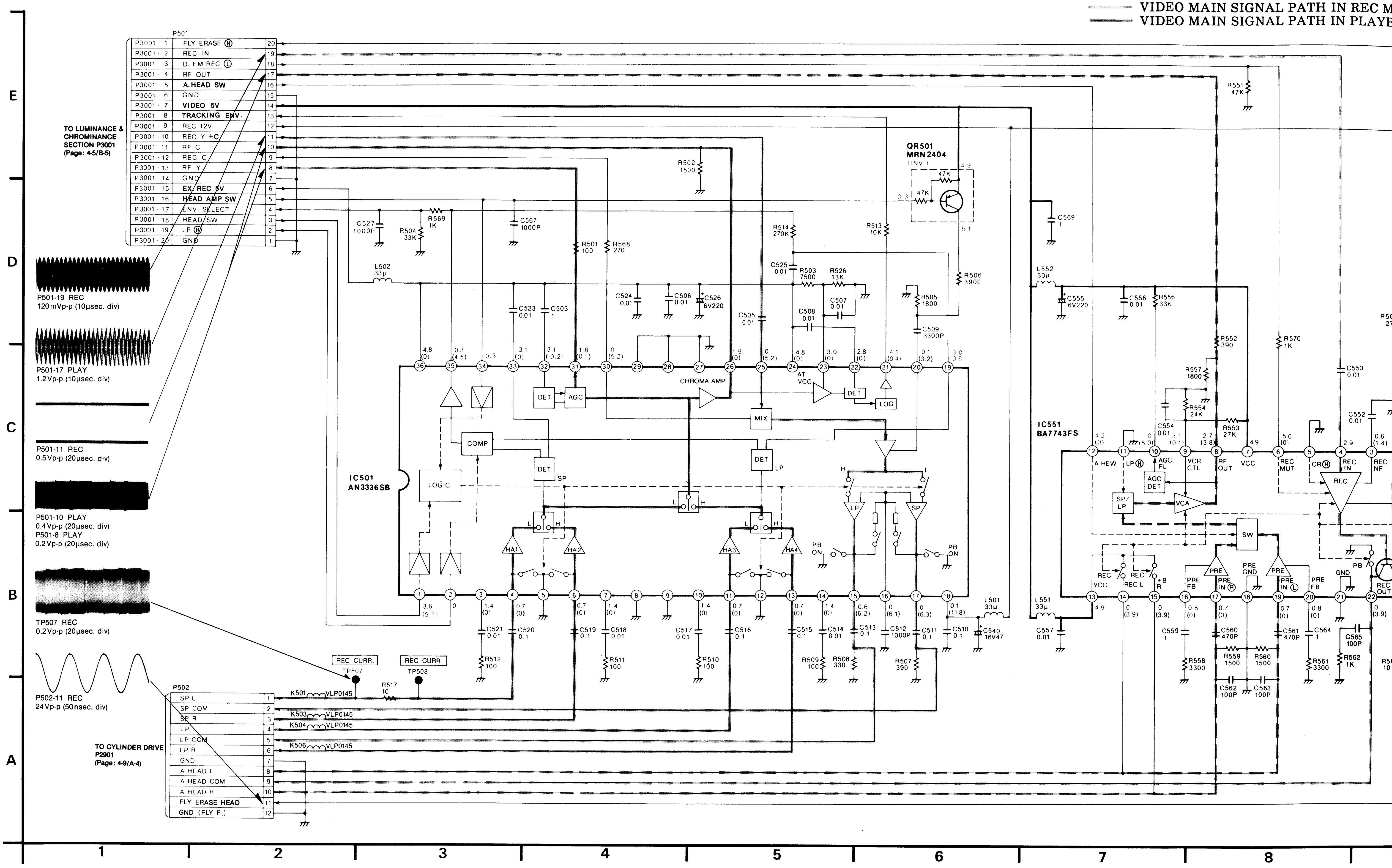
Adjustment	
VC7501	B-11
VR4004	A-4
VR6501	C-15
VR6502	C-14
VR6503	C-15
VR6504	C-16

Connector	
P6501	B-12
P6502	C-14
P6503	C-15
P7501	A-1
P7504	B-11
PP6001	A-15
PP6002	A-14
PP7501	C-2
PS4801	A-17
PS4802	A-18

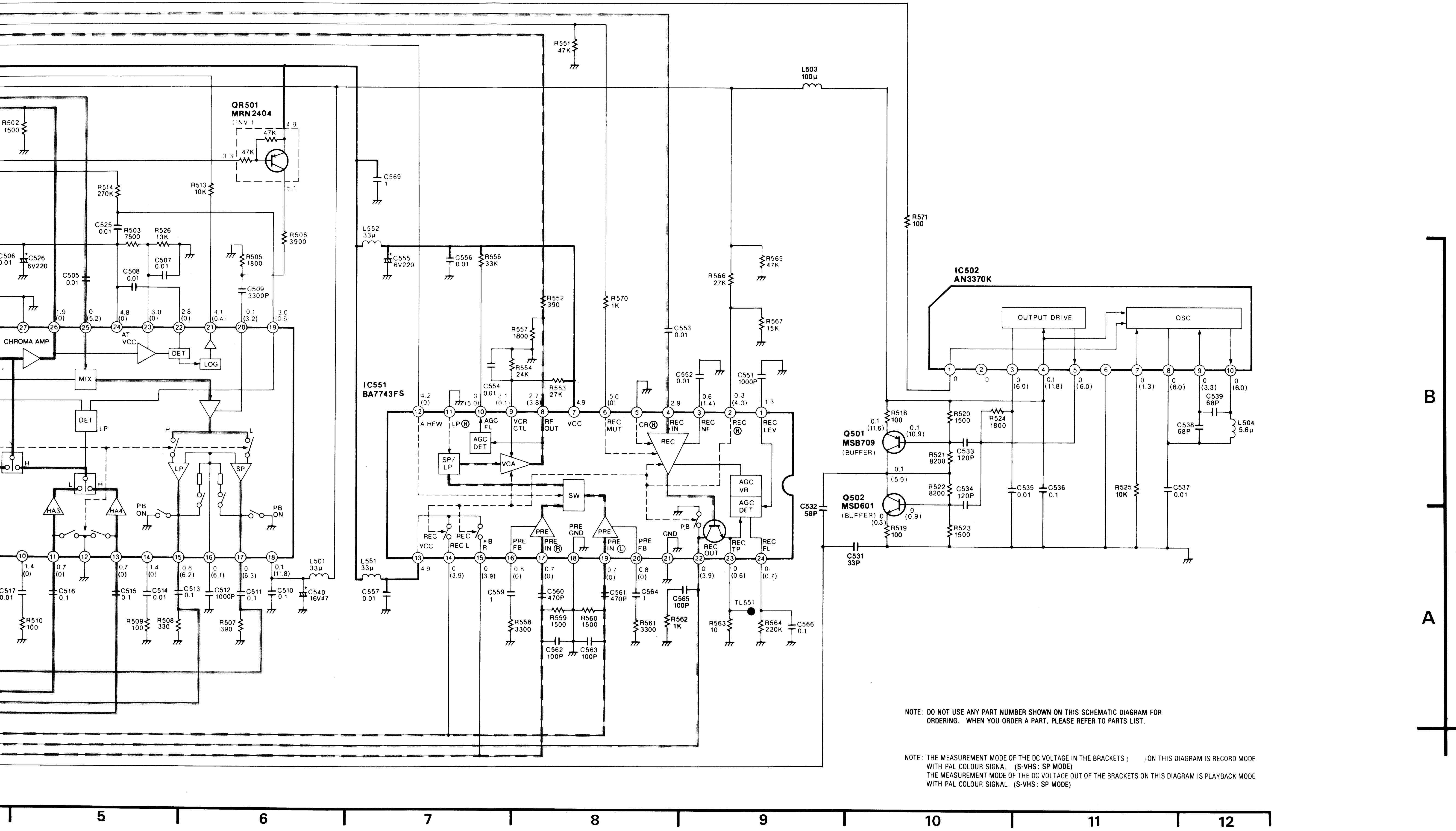
ADDRESS INFORMATION


VR C.B.A. (VEP06A17A)
FRONT JACK C.B.A. (VEP04531A)
IC7505
IC7504
IC7503
C7516
C7508
VC7501
TIMER CLOCK
K7504
C7507
C7525
R7525
C7513
C7511
C7514
C7515
X7501
R7524
D7542
D7507
R7515
P7504
P6501
QR6502
QR6503
R6509
D6511
S-VHS
D6505
POWER SAVE
R6505
D6507
W10
W1
D6504
CVC
QR6501
R6504
D6506
D6508
L6503
QR6504
QR6505
L6502
L6501
L6504
L6506
L6505
C6505
C6506
C6508
OFF ON
S6506
S-VHS
R6511
OFF ON AUTO
S6503
16:9
C6501
C6502
R6510
W3
W4
PHONES LEVEL
VR6502
PICTURE
VR6501
W5
P6502
P6503
S6502
EJECT
S6501
POWER
R6513
R6514
R6515
R6516
R6507
R6517
VR6503 (R)
VR6504 (L)
Hi-Fi REC LEVEL
AUDIO IN (R)
AUDIO IN (L)
VIDEO IN
S-VIDEO IN
W6
J6501 (AV3)
C6509
IC6501
C6513
C6512
C6515
C6514
W12
W7
W11
W2
PP6002
PP6001
BOTTON GND
W8
W9
C6504
C6507
C6503
J4801
PHONES
J4802
MIC
W101
LB4801
J4803
SYNC EDIT
PS4801
PS4802
11
12
13
14
15
16
17
18

4-17. HEAD AMP SCHEMATIC DIAGRAM


VIDEO MAIN SIGNAL PATH IN REC M
VIDEO MAIN SIGNAL PATH IN PLAYE
P501
P3001 · 1 FLY ERASE Ⓗ 20
P3001 · 2 REC IN 19
P3001 · 3 D. FM REC Ⓛ 18
P3001 · 4 RF OUT 17
P3001 · 5 A.HEAD SW 16
P3001 · 6 GND 15
P3001 · 7 VIDEO 5V 14
P3001 · 8 TRACKING ENV. 13
P3001 · 9 REC 12V 12
P3001 · 10 REC Y +C 11
P3001 · 11 RF C 10
P3001 · 12 REC C 9
P3001 · 13 RF Y 8
P3001 · 14 GND 7
P3001 · 15 EX. REC 5V 6
P3001 · 16 HEAD AMP SW 5
P3001 · 17 ENV SELECT 4
P3001 · 18 HEAD SW 3
P3001 · 19 LP Ⓗ 2
P3001 · 20 GND 1
TO LUMINANCE & CHROMINANCE SECTION P3001 (Page: 4-5/B-5)
P501-19 REC 120mVp-p (10µsec. div)
P501-17 PLAY 1.2Vp-p (10µsec. div)
P501-11 REC 0.5Vp-p (20µsec. div)
P501-10 PLAY 0.4Vp-p (20µsec. div)
P501-8 PLAY 0.2Vp-p (20µsec. div)
TP507 REC 0.2Vp-p (20µsec. div)
P502-11 REC 24Vp-p (50nsec. div)
IC501 AN3336SB
LOGIC
COMP
DET
AGC
DET SP
DET LP
CHROMA AMP
MIX
AT VCC
LOG
HA1
HA2
HA3
HA4
LP
SP
PB ON
QR501 MRN2404
47K
47K
IC551 BA7743FS
A HEW
LP Ⓗ
AGC FL
AGC DET
VCR CTL
RF OUT
VCC
REC MUT
CR Ⓗ
REC IN
REC NF
REC
SP/LP
VCA
SW
PRE
PRE FB
PRE IN Ⓡ
PRE GND
PRE IN Ⓛ
REC VCC
REC L
REC R
+B
GND
PB
REC OUT
C527 1000P
R504 33K
R569 1K
C567 1000P
R501 100
R568 270
R502 1500
R514 270K
R513 10K
R506 3900
C569 1
R551 47K
L502 33µ
C523 0.01
C503 1
C524 0.01
C506 0.01
C526 6V220
C505 0.01
C525 0.01
R503 7500
R526 13K
C508 0.01
C507 0.01
R505 1800
C509 3300P
L552 33µ
C555 6V220
C556 0.01
R556 33K
R552 390
R557 1800
R554 24K
R553 27K
C554 0.01
R570 1K
C553 0.01
C552 0.01
C521 0.01
C520 0.1
C519 0.1
C518 0.01
C517 0.01
C516 0.1
C515 0.1
C514 0.01
C513 0.1
C512 1000P
C511 0.1
C510 0.1
C540 16V47
L501 33µ
L551 33µ
C557 0.01
R512 100
R511 100
R510 100
R509 100
R508 330
R507 390
C559 1
C560 470P
C561 470P
C564 1
C565 100P
R558 3300
R559 1500
R560 1500
R561 3300
R562 1K
C562 100P
C563 100P
REC CURR. TP507
REC CURR. TP508
R517 10
K501 VLP0145
K503 VLP0145
K504 VLP0145
K506 VLP0145
P502
SP L 1
SP COM 2
SP R 3
LP L 4
LP COM 5
LP R 6
GND 7
A HEAD L 8
A HEAD COM 9
A HEAD R 10
FLY ERASE HEAD 11
GND (FLY E.) 12
TO CYLINDER DRIVE P2901 (Page: 4-9/A-4)
A B C D E
1 2 3 4 5 6 7 8

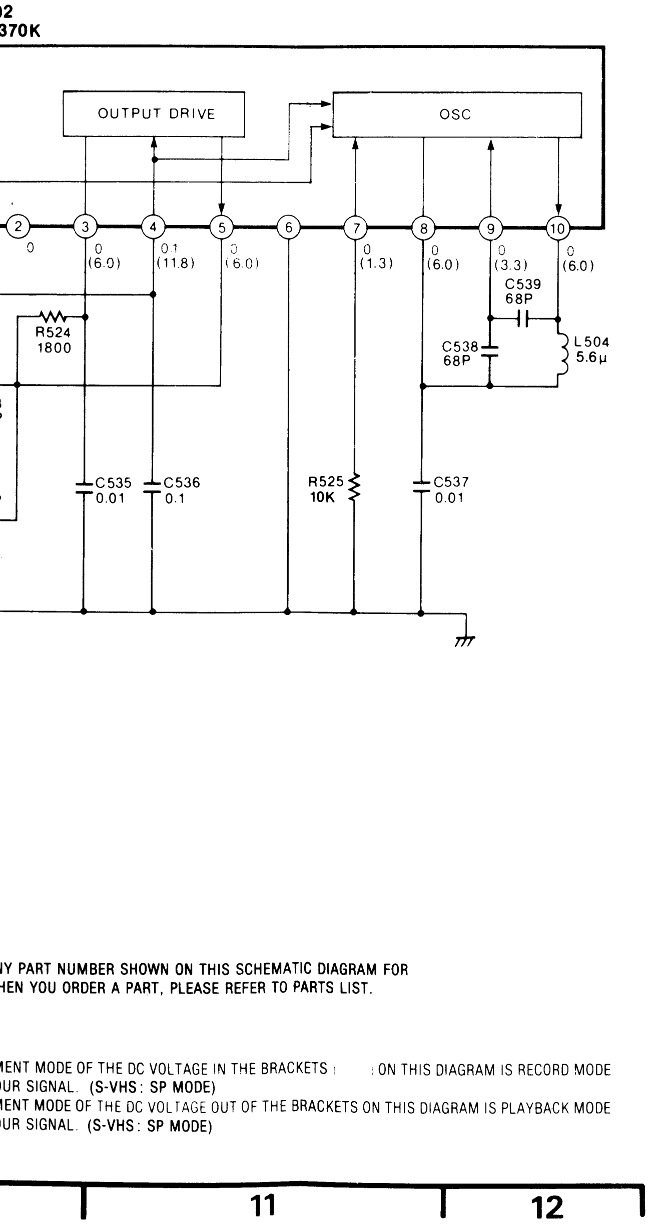
VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
Hi-Fi AUDIO MAIN SIGNAL PATH IN REC MODE
Hi-Fi AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE


QR501
MRN2404
(INV.)
47K
R551 47K
L503 100μ
C569 1
R502 1500
R514 270K
R513 10K
R506 3900
C525 0.01
R503 7500
R526 13K
C526 6V220
C506 0.01
C505 0.01
C508 0.01
C507 0.01
R505 1800
C509 3300P
L552 33μ
C555 6V220
C556 0.01
R556 33K
R552 390
R570 1K
R566 27K
R565 47K
R567 15K
R571 100
C553 0.01
R557 1800
R554 24K
R553 27K
C554 0.01
C552 0.01
C551 1000P
CHROMA AMP
AT VCC
DET
LOG
MIX
LP
SP
HA3
HA4
PB ON
IC551
BA7743FS
A HEW
LP Ⓗ
AGC FL
VCR CTL
RF OUT
VCC
REC MUT
CR Ⓗ
REC IN
REC NF
REC Ⓡ
REC LEV
AGC DET
SP/LP
VCA
REC
SW
AGC VR
AGC DET
REC VCC
REC L
REC R
+B
PRE FB
PRE IN Ⓡ
PRE GND
PRE IN Ⓛ
GND
PB
REC OUT
REC TP
REC FL
PRE
IC502
AN3370K
OUTPUT DRIVE
OSC
Q501
MSB709
(BUFFER)
Q502
MSD601
(BUFFER)
R518 100
R519 100
R520 1500
R524 1800
R521 8200
C533 120P
R522 8200
C534 120P
R523 1500
C532 56P
C531 33P
C535 0.01
C536 0.1
R525 10K
C537 0.01
C538 68P
C539 68P
L504 5.6μ
L501 33μ
L551 33μ
C557 0.01
C517 0.01
C516 0.1
R510 100
C515 0.1
C514 0.01
R509 100
R508 330
C513 0.1
C512 1000P
R507 390
C511 0.1
C510 0.1
C540 16V47
C559 1
R558 3300
C560 470P
R559 1500
R560 1500
C561 470P
C562 100P
C563 100P
C564 1
R561 3300
C565 100P
R562 1K
R563 10
TL551
R564 220K
C566 0.1
5
6
7
8
9
10
11
12
A
B

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE



2
370K
OUTPUT DRIVE
OSC
2
3
4
5
6
7
8
9
10
0
0
(6.0)
0.1
(11.8)
0
(6.0)
0
(1.3)
0
(6.0)
0
(3.3)
0
(6.0)
C539
68P
R524
1800
C538
68P
L504
5.6μ
C535
0.01
C536
0.1
R525
10K
C537
0.01
11
12

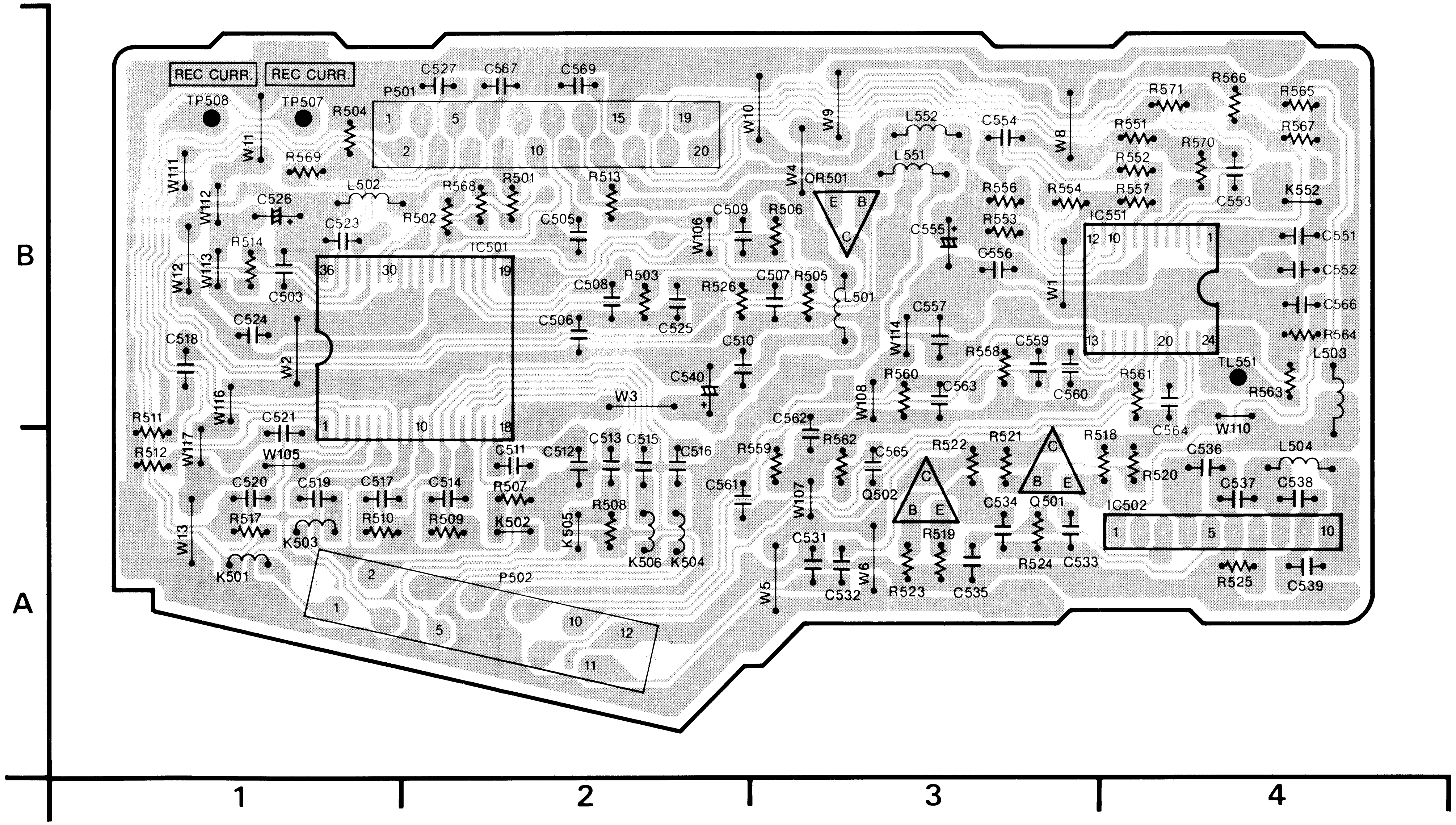
IY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
HEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE
UR SIGNAL. (S-VHS: SP MODE)
IENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE
UR SIGNAL. (S-VHS: SP MODE)

4-18. HEAD AMP C.B.A. (VEP05176G)

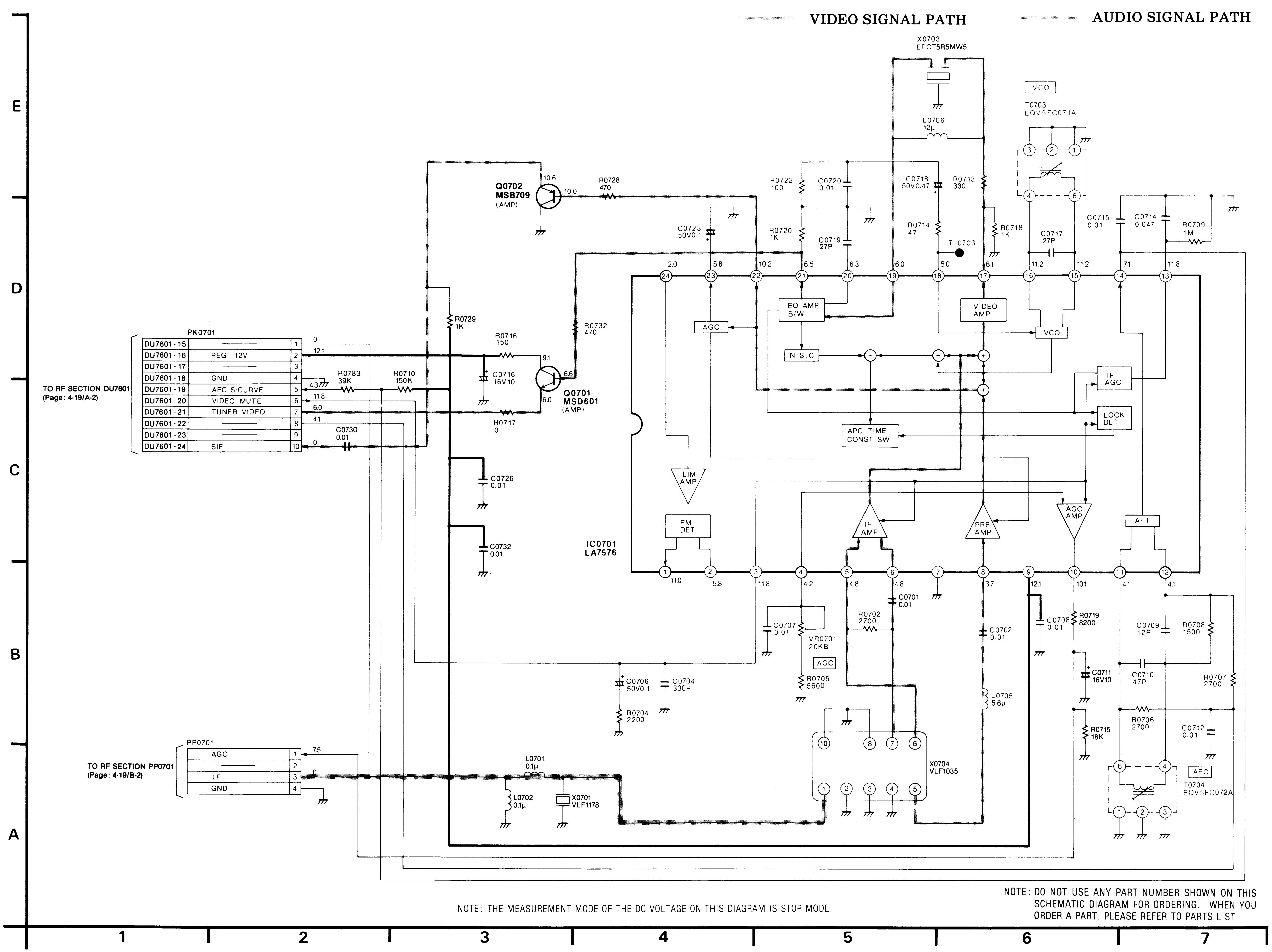
HEAD AMP C.B.A.	
Transistor	
Q501 Q502	A-3 A-3
Transistor & Resistor	
QR501	B-3
Integrated Circuit	
IC501 IC502 IC551	B-1 A-4 B-4
Test Point	
TL551 TP507 TP508	B-4 B-1 B-1
Connector	
P501 P502	B-2 A-1

ADDRESS INFORMATION



B
A
1
2
3
4
REC CURR.
REC CURR.
TP508
TP507
P501
C527
C567
C569
R504
R569
W11
W111
W112
W12
W113
R514
C526
L502
C523
R568
R501
R502
R513
C505
IC501
36
30
19
1
10
18
C503
C524
C518
W2
W116
C521
R511
R512
W117
W105
C520
C519
C517
C514
C511
C512
C513
C515
C516
R507
R517
R510
R509
K502
K503
K501
W13
R508
K505
K506
K504
P502
1
2
5
10
11
12
15
19
20
W10
W9
W4
QR501
E
B
C
L552
L551
C554
W8
W106
C509
R506
C508
R503
R526
C507
R505
C506
C525
L501
C510
C540
W3
C555
C556
R553
R556
C557
W114
R558
C559
C560
R560
C563
W108
C562
R562
R559
C561
W107
C565
Q502
R522
R521
Q501
C534
R519
R523
R524
C533
C535
C531
C532
W6
W5
R554
R551
R552
R557
R571
R570
R566
R565
R567
C553
K552
IC551
12
10
13
20
24
W1
C551
C552
C566
R564
L503
TL551
R563
R561
C564
W110
R518
R520
C536
L504
C537
C538
IC502
R525
C539

4-19. TV DEMODULATOR PACK SCHEMATIC DIAGRAM


VIDEO SIGNAL PATH
AUDIO SIGNAL PATH
E
D
C
B
A
1
2
3
4
5
6
7
X0703
EFCT5R5MW5
L0706
12μ
VCO
T0703
EQV5EC071A
Q0702
MSB709
(AMP)
10.6
10.0
R0728
470
R0722
100
C0720
0.01
C0718
50V0.47
R0713
330
C0723
50V0.1
R0720
1K
C0719
27P
R0714
47
TL0703
R0718
1K
C0717
27P
C0715
0.01
C0714
0.047
R0709
1M
PK0701
DU7601-15
DU7601-16
REG 12V
DU7601-17
DU7601-18
GND
DU7601-19
AFC S-CURVE
DU7601-20
VIDEO MUTE
DU7601-21
TUNER VIDEO
DU7601-22
DU7601-23
DU7601-24
SIF
TO RF SECTION DU7601
(Page: 4-19/A-2)
R0729
1K
R0716
150
R0732
470
C0716
16V10
R0783
39K
R0710
150K
Q0701
MSD601
(AMP)
R0717
0
C0730
0.01
C0726
0.01
C0732
0.01
IC0701
LA7576
EQ AMP
B/W
VIDEO
AMP
AGC
N.S.C
VCO
IF
AGC
LOCK
DET
APC TIME
CONST SW
LIM
AMP
FM
DET
IF
AMP
PRE
AMP
AGC
AMP
AFT
C0707
0.01
VR0701
20KB
AGC
R0705
5600
R0702
2700
C0701
0.01
C0702
0.01
C0708
0.01
R0719
8200
C0709
12P
R0708
1500
C0711
16V10
C0710
47P
R0707
2700
C0706
50V0.1
C0704
330P
R0704
2200
L0705
5.6μ
R0715
18K
R0706
2700
C0712
0.01
X0704
VLF1035
AFC
T0704
EQV5EC072A
PP0701
AGC
IF
GND
TO RF SECTION PP0701
(Page: 4-19/B-2)
L0701
0.1μ
L0702
0.1μ
X0701
VLF1178

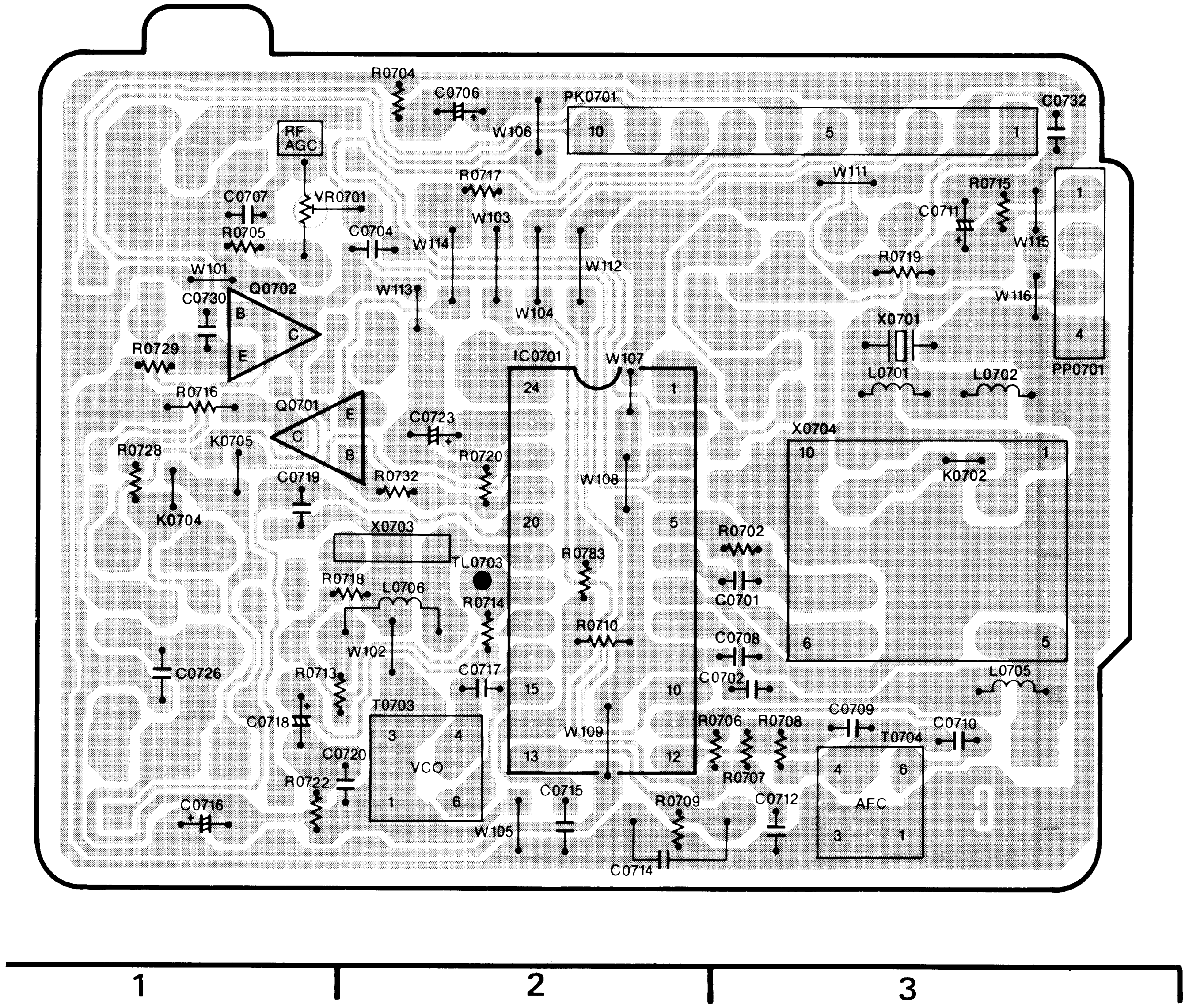
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

TV DEMODULATOR PACK C.B.A. (VEP07801U)

TV DEMODULATOR PACK C.B.A.	
Transistor	
Q0701 Q0702	B-1 B-1
Integrated Circuit	
IC0701	B-2
Test Point	
TL0703	B-2
Adjustment	
T0703 T0704 VR0701	A-2 A-3 C-1
Connector	
PK0701 PP0701	C-2 C-3

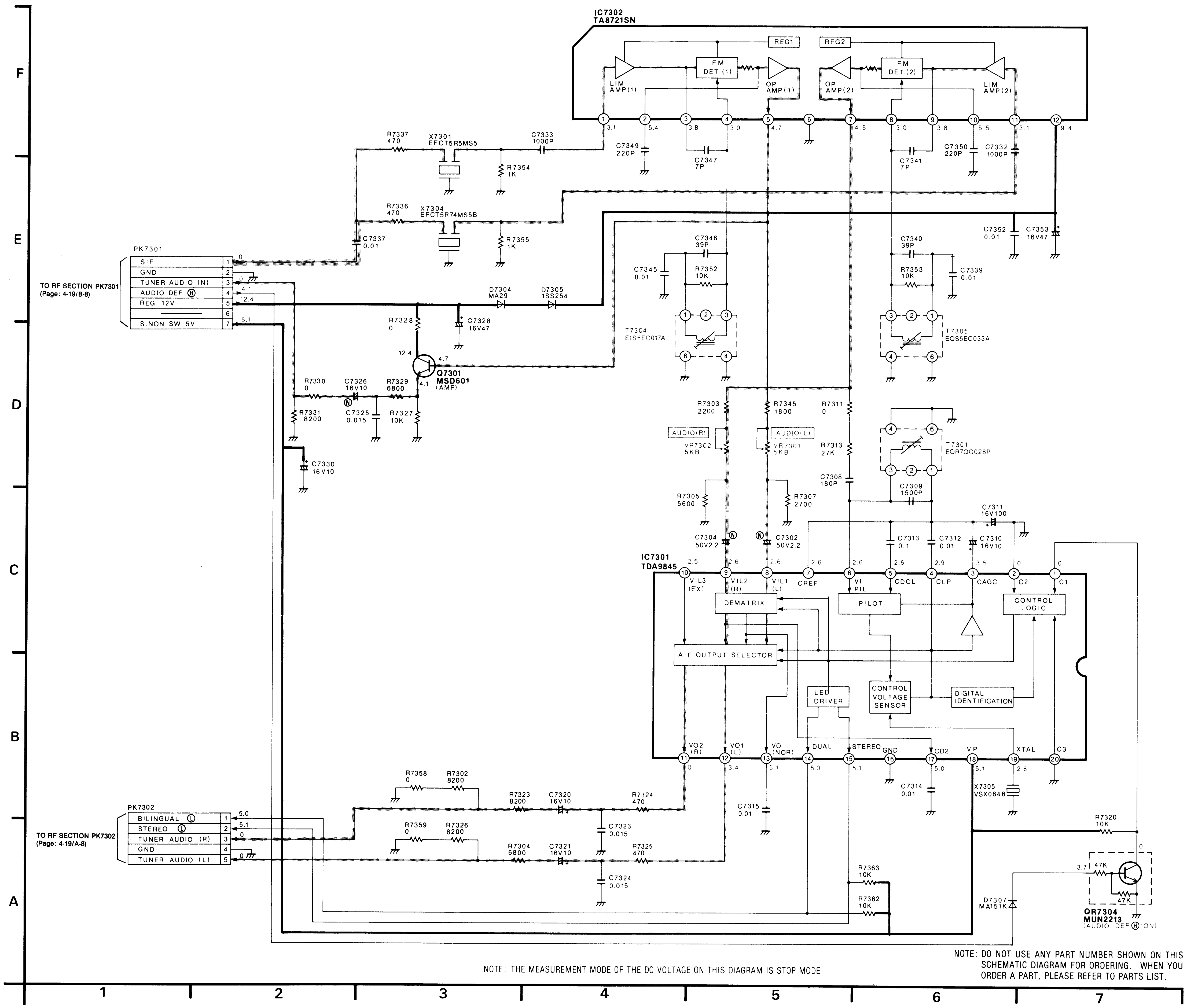
ADDRESS INFORMATION



R0704
C0706
W106
PK0701
10
5
1
C0732
RF AGC
VR0701
C0707
R0705
R0717
W103
C0704
W114
W112
W111
R0715
C0711
W115
1
R0719
W116
4
PP0701
W101
Q0702
C0730
B
C
E
W113
W104
R0729
IC0701
W107
24
1
X0701
L0701
L0702
R0716
Q0701
E
C
B
C0723
X0704
10
1
R0728
K0705
R0720
K0702
C0719
R0732
W108
K0704
20
5
X0703
R0702
TL0703
R0783
C0701
R0718
L0706
R0714
R0710
C0708
6
5
W102
L0705
C0726
R0713
C0717
15
10
C0702
C0718
T0703
3
4
VCO
1
6
C0720
W109
R0706
R0708
C0709
T0704
C0710
13
12
R0707
4
6
AFC
3
1
R0722
C0715
R0709
C0712
C0716
W105
C0714
1
2
3

4-21. DECODER PACK SCHEMATIC DIAGRAM

AUDIO MAIN SIGNAL PATH AUDIO SUB SIGNAL PATH

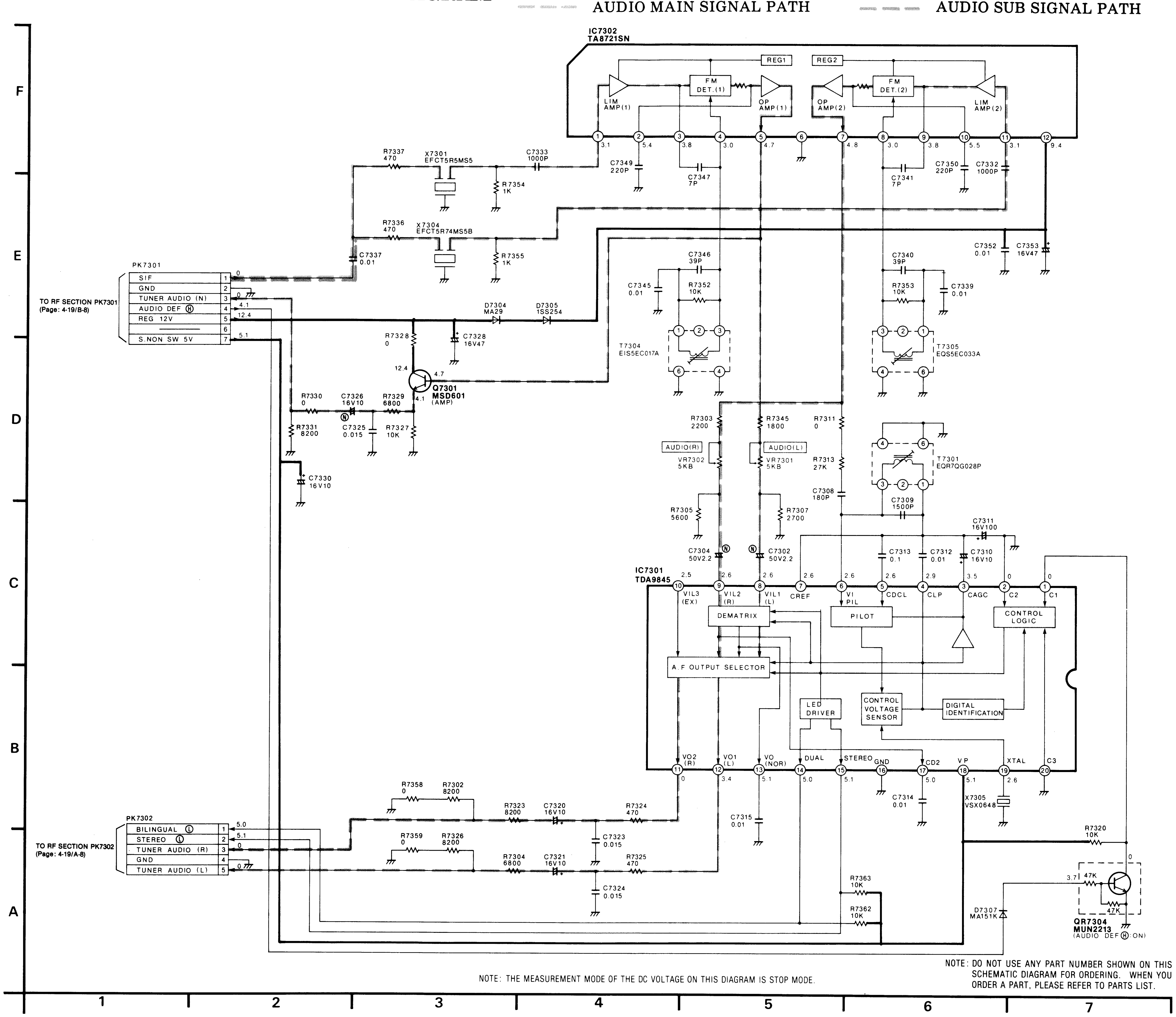

IC7302
TA8721SN
REG1
REG2
LIM AMP(1)
FM DET(1)
OP AMP(1)
OP AMP(2)
FM DET(2)
LIM AMP(2)
R7337 470
X7301 EFCT5R5MS5
C7333 1000P
R7354 1K
R7336 470
X7304 EFCT5R74MS5B
R7355 1K
C7337 0.01
C7349 220P
C7347 7P
C7341 7P
C7350 220P
C7332 1000P
C7352 0.01
C7353 16V47
C7346 39P
C7345 0.01
R7352 10K
T7304 EIS5EC017A
C7340 39P
R7353 10K
C7339 0.01
T7305 EQS5EC033A
PK7301
SIF
GND
TUNER AUDIO (N)
AUDIO DEF Ⓗ
REG 12V
S.NON SW 5V
TO RF SECTION PK7301 (Page: 4-19/B-8)
D7304 MA29
D7305 1SS254
R7328 0
C7328 16V47
Q7301 MSD601 (AMP)
R7330 0
C7326 16V10
R7329 6800
R7331 8200
C7325 0.015
R7327 10K
C7330 16V10
R7303 2200
R7345 1800
R7311 0
AUDIO(R)
VR7302 5KB
AUDIO(L)
VR7301 5KB
R7313 27K
T7301 EQR7QG028P
C7308 180P
C7309 1500P
R7305 5600
R7307 2700
C7311 16V100
C7304 50V2.2
C7302 50V2.2
C7313 0.1
C7312 0.01
C7310 16V10
IC7301
TDA9845
VIL3 (EX)
VIL2 (R)
VIL1 (L)
CREF
VI PIL
CDCL
CLP
CAGC
C2
C1
DEMATRIX
PILOT
CONTROL LOGIC
A.F OUTPUT SELECTOR
LED DRIVER
CONTROL VOLTAGE SENSOR
DIGITAL IDENTIFICATION
VO2 (R)
VO1 (L)
VO (NOR)
DUAL
STEREO
GND
CD2
VP
XTAL
C3
C7314 0.01
C7315 0.01
X7305 VSX0648
R7320 10K
QR7304 MUN2213 (AUDIO DEF Ⓗ ON)
D7307 MA151K
R7363 10K
R7362 10K
PK7302
BILINGUAL Ⓛ
STEREO Ⓛ
TUNER AUDIO (R)
GND
TUNER AUDIO (L)
TO RF SECTION PK7302 (Page: 4-19/A-8)
R7358 0
R7302 8200
R7323 8200
C7320 16V10
R7324 470
C7323 0.015
R7359 0
R7326 8200
R7304 6800
C7321 16V10
R7325 470
C7324 0.015
F
E
D
C
B
A
1
2
3
4
5
6
7

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-21. DECODER PACK SCHEMATIC DIAGRAM

AUDIO MAIN SIGNAL PATH AUDIO SUB SIGNAL PATH


IC7302
TA8721SN
REG1
REG2
LIM AMP(1)
FM DET.(1)
OP AMP(1)
OP AMP(2)
FM DET.(2)
LIM AMP(2)
3.1
5.4
3.8
3.0
4.7
4.8
3.0
3.8
5.5
3.1
9.4
R7337 470
X7301 EFCT5R5MS5
C7333 1000P
R7354 1K
C7349 220P
C7347 7P
C7341 7P
C7350 220P
C7332 1000P
R7336 470
X7304 EFCT5R74MS5B
R7355 1K
C7337 0.01
C7346 39P
C7340 39P
C7352 0.01
C7353 16V47
C7345 0.01
R7352 10K
R7353 10K
C7339 0.01
PK7301
SIF
GND
TUNER AUDIO (N)
AUDIO DEF Ⓗ
REG 12V
S.NON SW 5V
TO RF SECTION PK7301 (Page: 4-19/B-8)
0
4.1
12.4
5.1
D7304 MA29
D7305 1SS254
T7304 EIS5EC017A
T7305 EQS5EC033A
R7328 0
C7328 16V47
12.4
4.7
4.1
Q7301 MSD601 (AMP)
R7330 0
C7326 16V10
R7329 6800
R7331 8200
C7325 0.015
R7327 10K
C7330 16V10
R7303 2200
R7345 1800
R7311 0
AUDIO(R)
AUDIO(L)
VR7302 5KB
VR7301 5KB
R7313 27K
T7301 EQR7QG028P
C7308 180P
C7309 1500P
R7305 5600
R7307 2700
C7311 16V100
C7304 50V2.2
C7302 50V2.2
C7313 0.1
C7312 0.01
C7310 16V10
IC7301
TDA9845
2.5
2.6
2.6
2.6
2.6
2.6
2.9
3.5
0
0
VIL3 (EX)
VIL2 (R)
VIL1 (L)
CREF
VI PIL
CDCL
CLP
CAGC
C2
C1
DEMATRIX
PILOT
CONTROL LOGIC
A.F OUTPUT SELECTOR
LED DRIVER
CONTROL VOLTAGE SENSOR
DIGITAL IDENTIFICATION
VO2 (R)
VO1 (L)
VO (NOR)
DUAL
STEREO
GND
CD2
VP
XTAL
C3
0
3.4
5.1
5.0
5.1
5.0
5.1
2.6
R7358 0
R7302 8200
R7323 8200
C7320 16V10
R7324 470
C7323 0.015
R7359 0
R7326 8200
R7304 6800
C7321 16V10
R7325 470
C7324 0.015
C7315 0.01
C7314 0.01
X7305 VSX0648
PK7302
BILINGUAL Ⓛ
STEREO Ⓛ
TUNER AUDIO (R)
GND
TUNER AUDIO (L)
TO RF SECTION PK7302 (Page: 4-19/A-8)
5.0
5.1
0
0
R7363 10K
R7362 10K
R7320 10K
D7307 MA151K
3.7
47K
47K
0
QR7304 MUN2213 (AUDIO DEF Ⓗ:ON)
Ⓝ
F
E
D
C
B
A
1
2
3
4
5
6
7

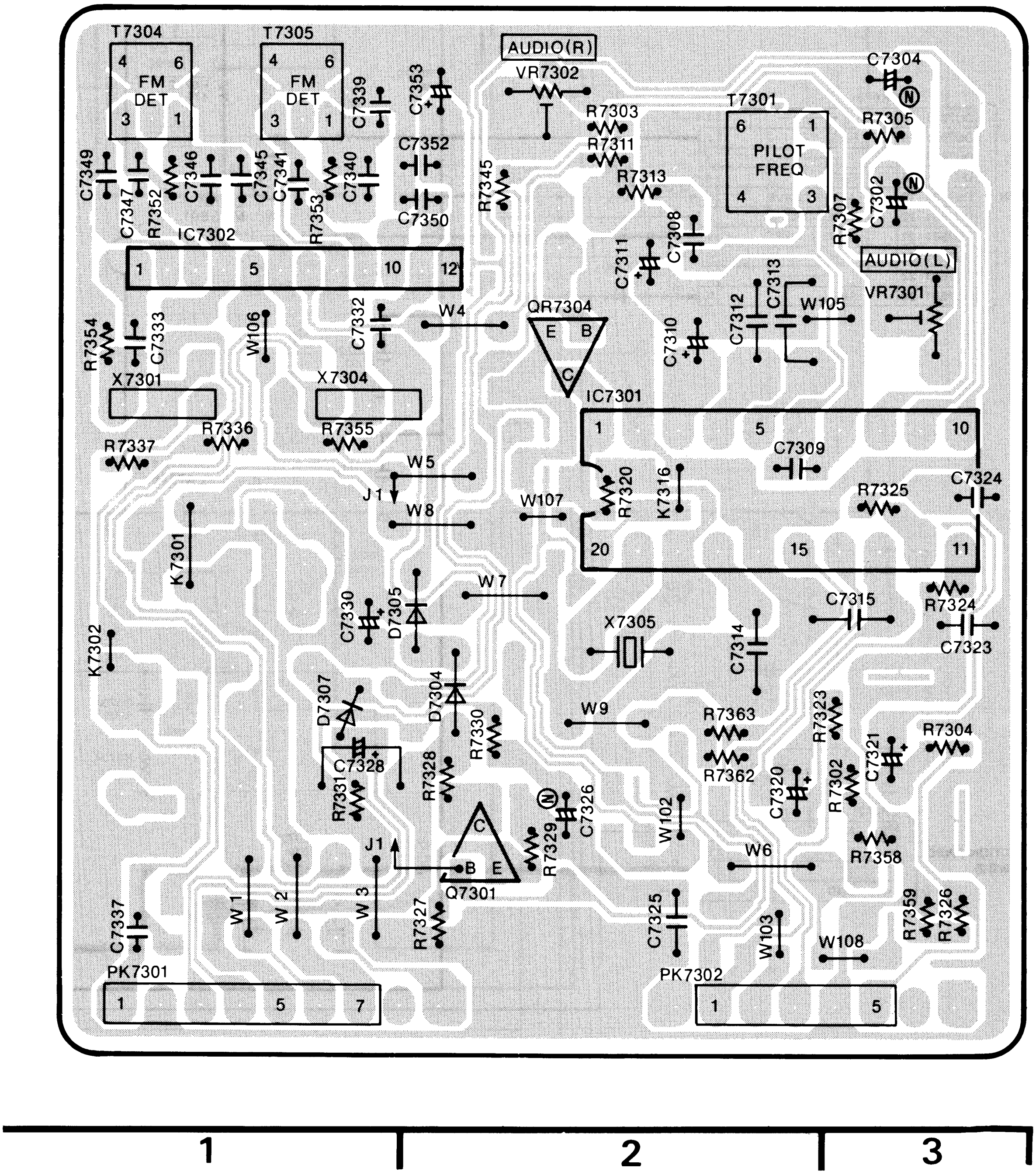
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

. DECODER PACK C.B.A. (VEP07784C)

DECODER PACK C.B.A.	
Transistor	
Q7301	A-2
Transistor & Resistor	
QR7304	B-2
Integrated Circuit	
IC7301 IC7302	B-3 C-1
Adjustment	
T7301 T7304 T7305 VR7301 VR7302	C-2 C-1 C-1 B-3 C-2
Connector	
PK7301 PK7302	A-1 A-2

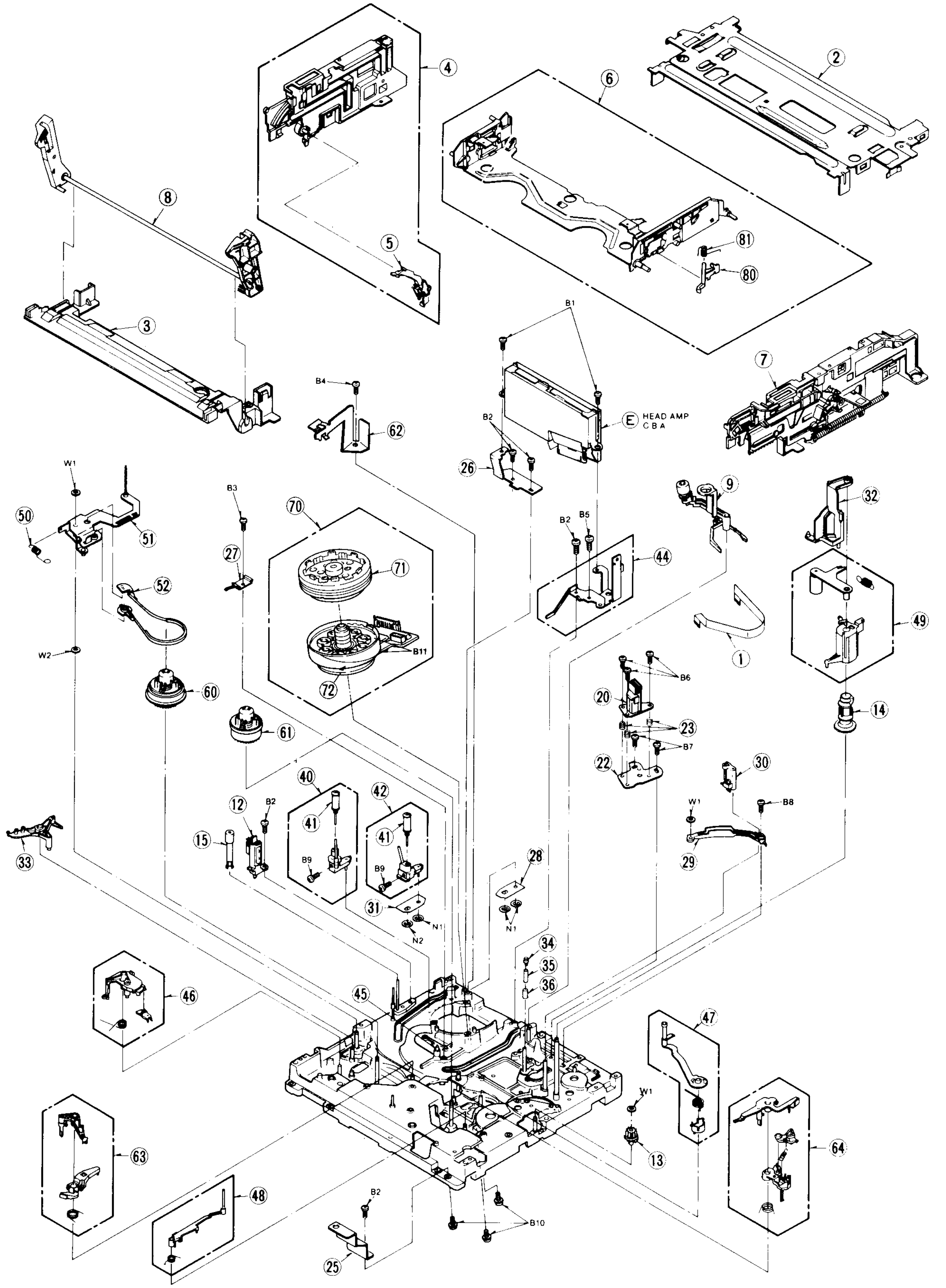
ADDRESS INFORMATION


T7304
4
6
FM
DET
3
1
T7305
FM
DET
AUDIO(R)
VR7302
R7303
R7311
R7313
T7301
6
1
PILOT
FREQ
4
3
C7304
R7305
C7302
R7307
AUDIO(L)
VR7301
C7339
C7353
C7352
C7350
R7345
C7308
C7311
C7313
C7312
W105
C7310
C7349
C7347
R7352
C7346
C7345
C7341
R7353
C7340
IC7302
1
5
10
12
R7354
C7333
W106
C7332
W4
QR7304
E
B
C
IC7301
X7301
X7304
R7337
R7336
R7355
W5
J1
W8
W107
1
5
10
C7309
R7320
K7316
R7325
C7324
20
15
11
K7301
W7
C7330
D7305
X7305
C7314
C7315
R7324
C7323
K7302
D7307
D7304
W9
R7363
R7362
R7323
R7304
C7328
R7331
R7328
R7330
C7326
R7329
C7320
R7302
C7321
W102
R7358
J1
C
B
E
Q7301
W6
W1
W2
W3
R7327
C7337
C7325
W103
W108
R7359
R7326
PK7301
1
5
7
PK7302
1
5
1
2
3

SECTION 5
EXPLODED VIEWS & PARTS LIST

5-1. EXPLODED VIEW & MECHANICAL REPLACEMENT PARTS LIST

❶ CHASSIS PARTS SECTION (1)



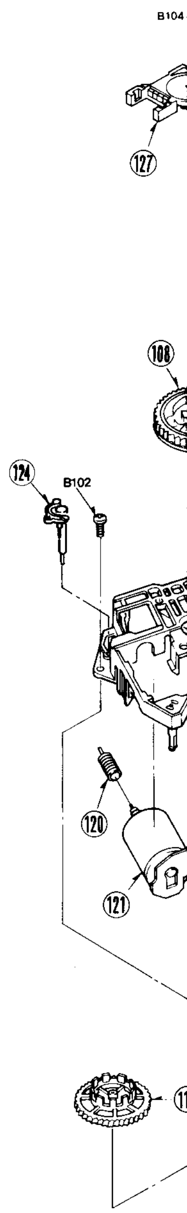
Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VWJ0743	FLAT CARD CABLE (6P)	1	P4003-P1501
2(1)		VMA8644	TOP PLATE	1	
3(1)		VMA8787	CASSETTE GUIDE	1	
4(1)		VXA4660	SIDE PLATE (L) UNIT	1	
5(1)		VML2902	OPENER LEVER	1	
6(1)		VXA4661	CASSETTE HOLDER PLATE UNIT	1	
7(1)		VXA4806	SIDE PLATE (R) UNIT	1	
8(1)		VXP1339	MAIN SHAFT UNIT	1	
9(1)		VXL2440	CLEANER ARM UNIT	1	
12(1)		VBS0052	FE HEAD	1	
13(1)		VDG0871	CARRIAGE CONNECTION GEAR	1	
14(1)		VDG0886	PINCH CAM GEAR	1	
15(1)		VXP1402	IMPEDANCE ROLLER UNIT	1	
20(1)		VED0217	A/C HEAD (1) UNIT	1	
22(1)		VMA8624	A/C HEAD BASE	1	
23(1)		VMB2515	A/C HEAD SPRING	3	
25(1)		VMA8761	MOUNT ANGLE	1	
26(1)		VMA9158	HEAD AMP MOUNT ANGLE (L)	1	
27(1)		VMC0917	EARTH SPRING	1	
28(1)		VMA8874	INCLIND BASE HOLDER (S)	1	
29(1)		VMD2078	P5 STOPPER BASE	1	
30(1)		VXA4927	P5 POST STOPPER	1	
31(1)		VMA8873	INCLIND BASE HOLDER (T)	1	
32(1)		VMD2101	OPENER PIECE	1	
33(1)		VML2776	TENSION SPRING ARM	1	
34(1)		VMX1544	P4 UPPER LIMITER	1	
35(1)		VMX2175	P4 SLEEVE	1	
36(1)		VMX2176	P4 LOWER LIMITER	1	
40(1)		VXA5245KIT	INCLINED BASE (S) UNIT	1	OR VXA4982KIT
41(1)		VXP1415	ROLLER POST	2	
42(1)		VXA5247KIT	INCLINED BASE (T) UNIT	1	OR VXA4984KIT
44(1)		VXA4974	HEAD AMP MOUNT ANGLE (R) U.	1	
45(1)		VMS5383	CASSETTE POSITION FIXTURE	1	
46(1)		VXL2310	REVIEW ARM UNIT	1	
47(1)		VXL2306	P5 ARM UNIT	1	
48(1)		VXL2394	TAKE UP TENSION REGULATOR ARM UNIT	1	
49(1)		VXL2246	PINCH ARM UNIT	1	
50(1)		VMB2434	TENSION SPRING	1	
51(1)		VXL2309	TENSION ARM (1) UNIT	1	
52(1)		VXZ0310	TENSION BAND UNIT	1	
60(1)		VXR0236	SUPPLY REEL TABLE UNIT	1	
61(1)		VXR0237	TAKE UP REEL TABLE UNIT	1	
62(1)		VXS0241	EARTH PLATE	1	
63(1)		VXZ0312	SUPPLY BRAKE ARM UNIT	1	
64(1)		VXZ0313	TAKE UP BRAKE ARM UNIT	1	
70(1)		VEG1219	CYLINDER UNIT	1	
71(1)		VXP1561	UPPER CYLINDER UNIT	1	
72(1)		VSC4137	CYLINDER SHIELD PLATE	1	
80(1)		VML2680	RELEASE LEVER	1	
81(1)		VMB2013	RELEASE SPRING	1	
B1(1)		VHD0773	SCREW	2	
B2(1)		XTV26+6F	SCREW	5	
B3(1)		XTV26+4F	SCREW	1	
B4(1)		XTN3+8FFZ	SCREW	1	
B5(1)		XTV26+10F	SCREW	1	
B6(1)		VHD0762	SCREW	3	
B7(1)		XTV26+6FZ	SCREW	2	
B8(1)		XTV26+8F	SCREW	1	
B9(1)		XQN2+AJ4	SCREW	2	
B10(1)		VHD0342	SCREW	3	
B11(1)		XYNV0029	SCREW	2	
N1(1)		VHN0192	NUT	3	
N2(1)		VHN0193	NUT	1	
W1(1)		VMX2208	WASHER	3	
W2(1)		XWGV26D5G	WASHER	1	

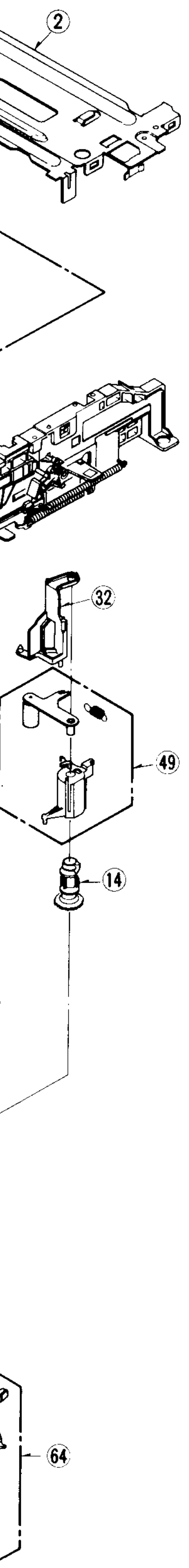
Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
100(2)		VEK5927	CAPSTAN STATOR UNIT	1	
101(2)		VBK0061	FG HEAD	1	
103(2)		VMA8930	ROTOR STOPPER	1	
104(2)		VMX1927	OIL SEAL	2	
105(2)		VXD0140	HOUSING UNIT	1	
106(2)		VXP1519	CAPSTAN ROTOR UNIT	1	
107(2)		VXQ0297	THRUST SCREW UNIT	1	
108(2)		VDG0913	MAIN CAM GEAR	1	
109(2)		VDG0956	SUPPLY REEL GEAR	1	
110(2)		VDG0957	TAKE UP REEL GEAR	1	
111(2)		VDG0868	WORM WHEEL GEAR	1	
112(2)		VDG0885	SUB CAM GEAR	1	
113(2)		VDV0235	TIMING BELT	1	
120(2)		VDG0866	WORM GEAR	1	
121(2)		VEM0427	LOADING MOTOR (1) UNIT	1	
123(2)		VMD1942	MOTOR BRACKET	1	
124(2)		VMD2552	S-VHS SW ACTUATER	1	
126(2)		VML2725	IDLER CONTROL LEVER	1	
127(2)		VSS0365	MODE SW	1	
128(2)		VXA5138	SS BRAKE BASE UNIT	1	
129(2)		VXA4799	TENSION ROLLER UNIT	1	
140(2)		VXL2378	IDLER ARM UNIT	1	
141(2)		VXL2372	DIRECT LEVER UNIT	1	
142(2)		VXL2299	SUPPLY LOADING ARM UNIT	1	
143(2)		VXL2300	TAKE UP LOADING ARM UNIT	1	
144(2)		VXL2307	MAIN LEVER UNIT	1	
145(2)		VXP1409	CENTRE CLUTCH	1	
B102(2)		XTV26+8F	SCREW	1	
B103(2)		XTV26+6F	SCREW	3	
B104(2)		VHD0753	SCREW	4	
B105(2)		VHD0754	SCREW	1	
B106(2)		XSB26+4FZ	SCREW	1	
W101(2)		VMX2208	WASHER	4	

❷ CHASS



ARTS LIST



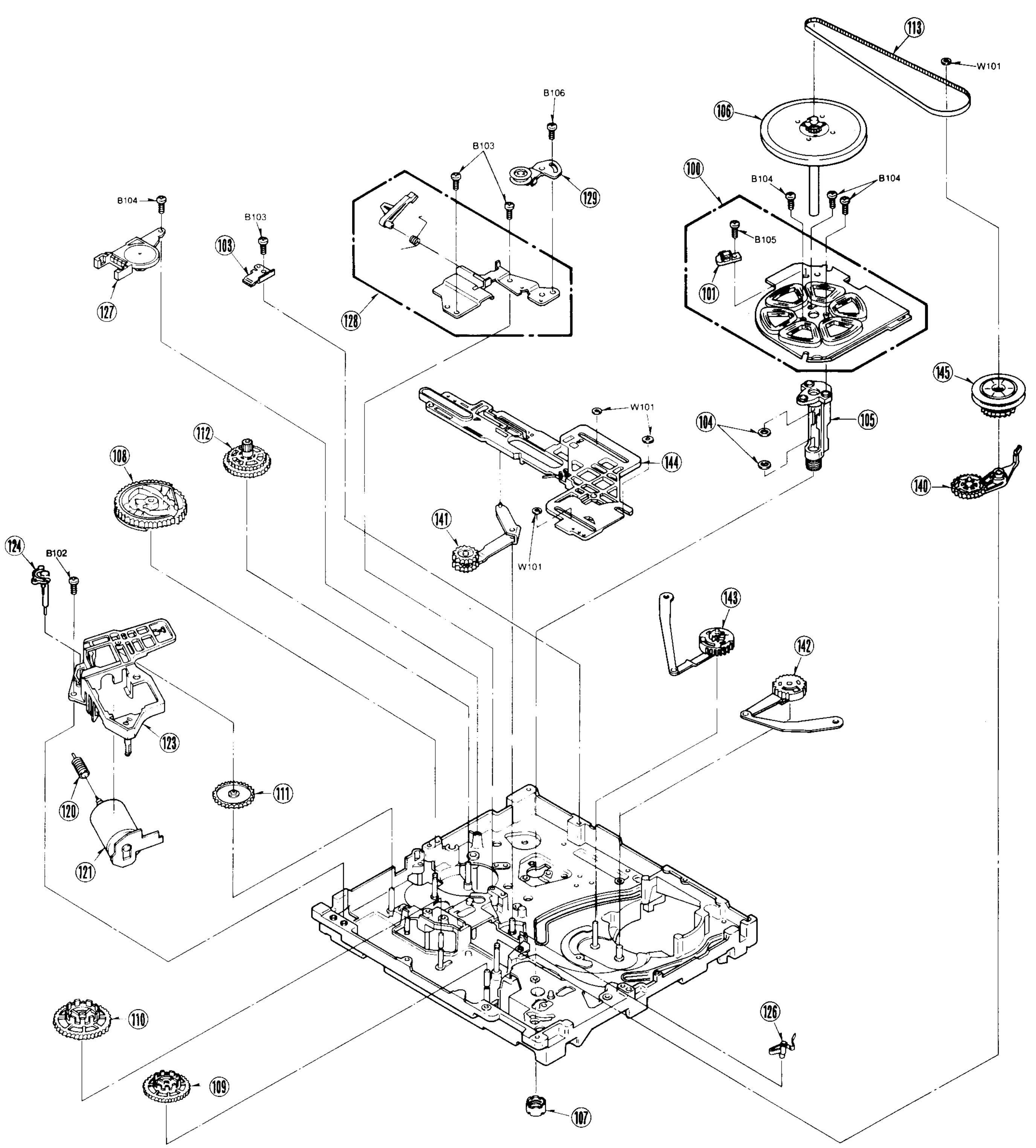
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VWJ0743	FLAT CARD CABLE (6P)	1	P4003-P1501
2(1)		VMA8644	TOP PLATE	1	
3(1)		VMA8787	CASSETTE GUIDE	1	
4(1)		VXA4660	SIDE PLATE (L) UNIT	1	
5(1)		VML2902	OPENER LEVER	1	
6(1)		VXA4661	CASSETTE HOLDER PLATE UNIT	1	
7(1)		VXA4806	SIDE PLATE (R) UNIT	1	
8(1)		VXP1339	MAIN SHAFT UNIT	1	
9(1)		VXL2440	CLEANER ARM UNIT	1	
12(1)		VBS0052	FE HEAD	1	
13(1)		VDG0871	CARRIAGE CONNECTION GEAR	1	
14(1)		VDG0886	PINCH CAM GEAR	1	
15(1)		VXP1402	IMPEDANCE ROLLER UNIT	1	
20(1)		VED0217	A/C HEAD (1) UNIT	1	
22(1)		VMA8624	A/C HEAD BASE	1	
23(1)		VMB2515	A/C HEAD SPRING	3	
25(1)		VMA8761	MOUNT ANGLE	1	
26(1)		VMA9158	HEAD AMP MOUNT ANGLE (L)	1	
27(1)		VMC0917	EARTH SPRING	1	
28(1)		VMA8874	INCLIND BASE HOLDER (S)	1	
29(1)		VMD2078	P5 STOPPER BASE	1	
30(1)		VXA4927	P5 POST STOPPER	1	
31(1)		VMA8873	INCLIND BASE HOLDER (T)	1	
32(1)		VMD2101	OPENER PIECE	1	
33(1)		VML2776	TENSION SPRING ARM	1	
34(1)		VMX1544	P4 UPPER LIMITER	1	
35(1)		VMX2175	P4 SLEEVE	1	
36(1)		VMX2176	P4 LOWER LIMITER	1	
40(1)		VXA5245KIT	INCLINED BASE (S) UNIT	1	OR VXA4982KIT
41(1)		VXP1415	ROLLER POST	2	
42(1)		VXA5247KIT	INCLINED BASE (T) UNIT	1	OR VXA4984KIT
44(1)		VXA4974	HEAD AMP MOUNT ANGLE (R) U.	1	
45(1)		VMS5383	CASSETTE POSITION FIXTURE	1	
46(1)		VXL2310	REVIEW ARM UNIT	1	
47(1)		VXL2306	P5 ARM UNIT	1	
48(1)		VXL2394	TAKE UP TENSION REGULATOR ARM UNIT	1	
49(1)		VXL2246	PINCH ARM UNIT	1	
50(1)		VMB2434	TENSION SPRING	1	
51(1)		VXL2309	TENSION ARM (1) UNIT	1	
52(1)		VXZ0310	TENSION BAND UNIT	1	
60(1)		VXR0236	SUPPLY REEL TABLE UNIT	1	
61(1)		VXR0237	TAKE UP REEL TABLE UNIT	1	
62(1)		VXS0241	EARTH PLATE	1	
63(1)		VXZ0312	SUPPLY BRAKE ARM UNIT	1	
64(1)		VXZ0313	TAKE UP BRAKE ARM UNIT	1	
70(1)		VEG1219	CYLINDER UNIT	1	
71(1)		VXP1561	UPPER CYLINDER UNIT	1	
72(1)		VSC4137	CYLINDER SHIELD PLATE	1	
80(1)		VML2680	RELEASE LEVER	1	
81(1)		VMB2013	RELEASE SPRING	1	
B1(1)		VHD0773	SCREW	2	
B2(1)		XTV26+6F	SCREW	5	
B3(1)		XTV26+4F	SCREW	1	
B4(1)		XTN3+8FFZ	SCREW	1	
B5(1)		XTV26+10F	SCREW	1	
B6(1)		VHD0762	SCREW	3	
B7(1)		XTV26+6FZ	SCREW	2	
B8(1)		XTV26+8F	SCREW	1	
B9(1)		XQN2+AJ4	SCREW	2	
B10(1)		VHD0342	SCREW	3	
B11(1)		XYNV0029	SCREW	2	
N1(1)		VHN0192	NUT	3	
N2(1)		VHN0193	NUT	1	
W1(1)		VMX2208	WASHER	3	
W2(1)		XWGV26D5G	WASHER	1	

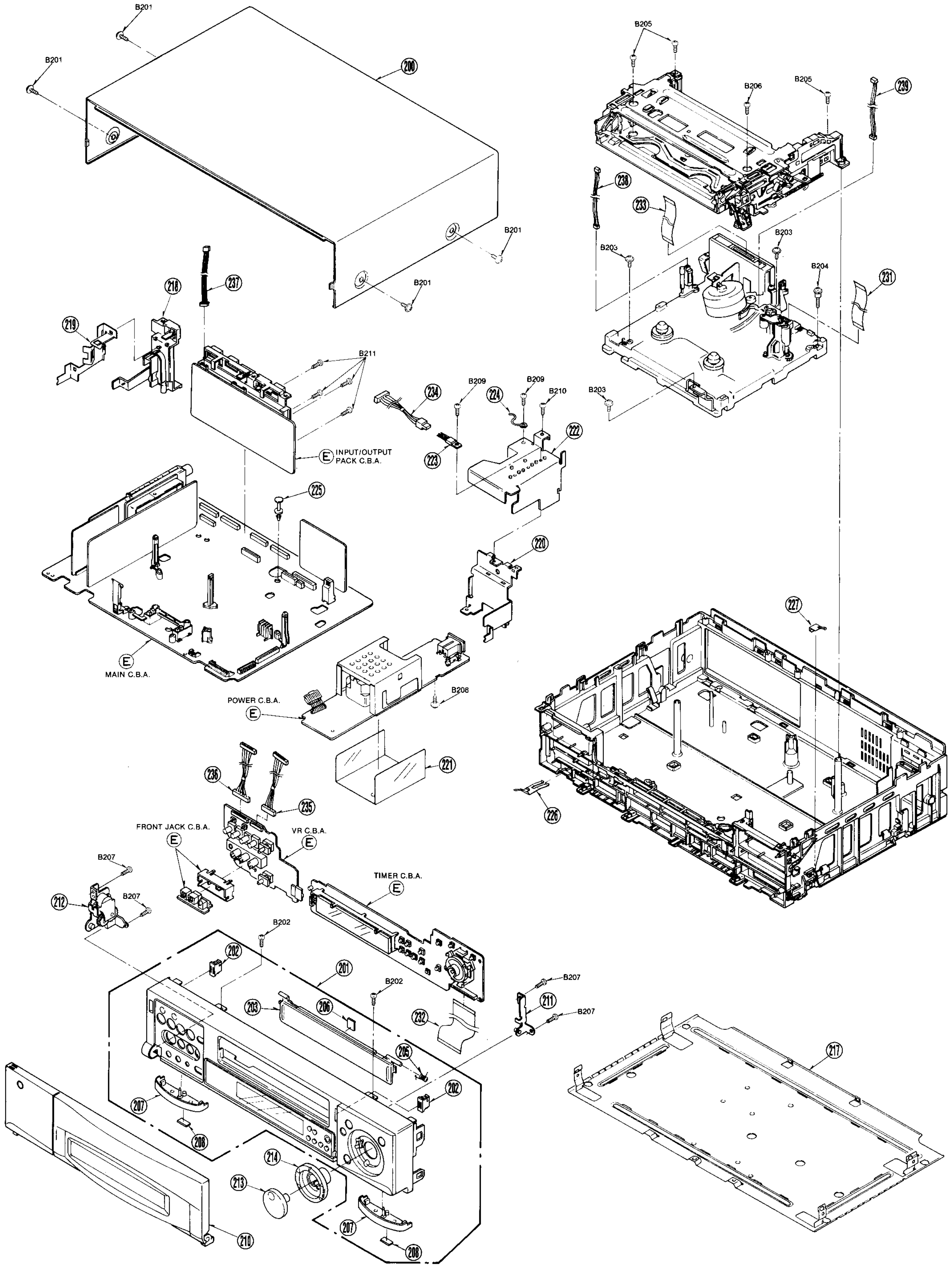
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
100(2)		VEK5927	CAPSTAN STATOR UNIT	1	
101(2)		VBK0061	FG HEAD	1	
103(2)		VMA8930	ROTOR STOPPER	1	
104(2)		VMX1927	OIL SEAL	2	
105(2)		VXD0140	HOUSING UNIT	1	
106(2)		VXP1519	CAPSTAN ROTOR UNIT	1	
107(2)		VXQ0297	THRUST SCREW UNIT	1	
108(2)		VDG0913	MAIN CAM GEAR	1	
109(2)		VDG0956	SUPPLY REEL GEAR	1	
110(2)		VDG0957	TAKE UP REEL GEAR	1	
111(2)		VDG0868	WORM WHEEL GEAR	1	
112(2)		VDG0885	SUB CAM GEAR	1	
113(2)		VDV0235	TIMING BELT	1	
120(2)		VDG0866	WORM GEAR	1	
121(2)		VEM0427	LOADING MOTOR (1) UNIT	1	
123(2)		VMD1942	MOTOR BRACKET	1	
124(2)		VMD2552	S-VHS SW ACTUATER	1	
126(2)		VML2725	IDLER CONTROL LEVER	1	
127(2)		VSS0365	MODE SW	1	
128(2)		VXA5138	SS BRAKE BASE UNIT	1	
129(2)		VXA4799	TENSION ROLLER UNIT	1	
140(2)		VXL2378	IDLER ARM UNIT	1	
141(2)		VXL2372	DIRECT LEVER UNIT	1	
142(2)		VXL2299	SUPPLY LOADING ARM UNIT	1	
143(2)		VXL2300	TAKE UP LOADING ARM UNIT	1	
144(2)		VXL2307	MAIN LEVER UNIT	1	
145(2)		VXP1409	CENTRE CLUTCH	1	
B102(2)		XTV26+8F	SCREW	1	
B103(2)		XTV26+6F	SCREW	3	
B104(2)		VHD0753	SCREW	4	
B105(2)		VHD0754	SCREW	1	
B106(2)		XSB26+4FZ	SCREW	1	
W101(2)		VMX2208	WASHER	4	

❷ CHASSIS PARTS SECTION (2)



❸ CASING PARTS SECTION


B201
B201
200
B205
B206
B205
239
238
233
B203
B203
B204
231
B201
B201
237
218
219
B211
234
B209
224
B209
B210
B203
222
E INPUT/OUTPUT PACK C.B.A.
223
225
220
E
MAIN C.B.A.
227
POWER C.B.A.
E
B208
221
236
235
226
FRONT JACK C.B.A.
E
VR C.B.A.
E
TIMER C.B.A.
E
B207
212
B207
B202
202
201
B202
203
206
232
B207
211
B207
205
202
217
207
208
214
213
210
207
208

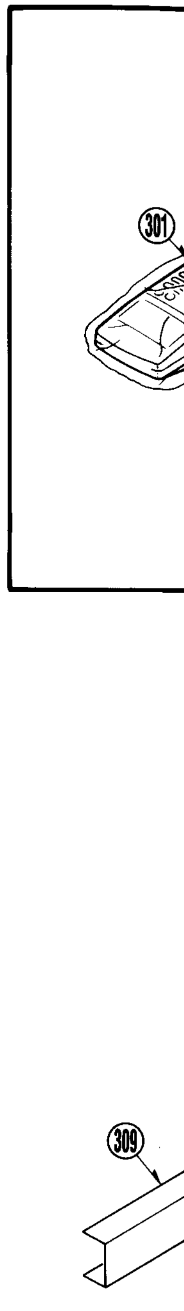
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

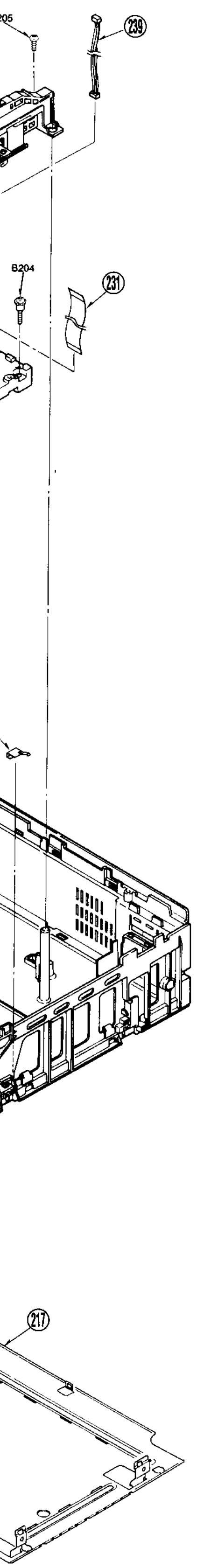
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
200(3)		VGM1150	TOP PANEL	1	
201(3)		VYP5931	FRONT PANEL (1) UNIT	1	
202(3)		VGQ2216	DOOR MAGNET	2	
203(3)		VKF2500	BLINDER PANEL	1	
205(3)		VMB2521	BLINDER SPRING	1	
206(3)		VMT0502	BLINDER CUSHION	1	
207(3)		VKA0197	LEG	2	
208(3)		VKA0122	FOOT	2	
210(3)		VYF2179	DOOR PANEL UNIT	2	
211(3)		VXA5429	DOOR ANGLE (R) UNIT	1	
212(3)		VXA5431	DOOR ANGLE (L) UNIT	1	
213(3)		VGU6966	JOG DIAL	1	
214(3)		VGU6967	SHUTTLE RING	1	
217(3)		VKU0412	BOTTOM PLATE	1	
218(3)		VJH0832	ANTENNA JACK PLATE	1	
219(3)		VMC1213	ANTENNA EARTH SPRING	1	
220(3)		VMP4717	AC PLATE	1	
221(3)		VMZ2394	POWER BARRIER	1	
222(3)		VSC4403	HEAT SINK	1	
223(3)		2SB1370YD01E	POWER TRANSISTOR	1	
224(3)		VJR3	CLAMPER	1	
225(3)		VMX2233	C.B.A. SPACER	1	
226(3)		VMC1062	JACK EARTH SPRING	1	
227(3)		VMC1065	POWER EARTH SPRING	1	
231(3)		VWJ0904	FLAT CARD CABLE 15P	1	P2004-P1507
232(3)		VWJ0954	FLAT CARD CABLE 32P	1	P3003-P7501
233(3)		VWJ0956	FLAT CARD CABLE 20P	1	P3001-P501
234(3)		VEE8564	WIRE CABLE	1	P2003-POWER TR.
235(3)		VEE9371	WIRE CABLE	1	P3902-P6502
236(3)		VEE9372	WIRE CABLE	1	P4001-P6503
237(3)		VEE9373	WIRE CABLE	1	P6002-P3901
238(3)		VEE9374	WIRE CABLE	1	P4002-P1509
239(3)		VEE9375	WIRE CABLE	1	P2002-P2902
B201(3)		XTW3+10TFZ	SCREW	4	
B202(3)		VHD0773	SCREW	2	
B203(3)		VHD0168	SCREW	3	
B204(3)		VHD0874	SCREW	1	
B205(3)		XTV26+8FR	SCREW	3	
B206(3)		XTV26+10F	SCREW	1	
B207(3)		XTN2+5GFZ	SCREW	4	
B208(3)		VHD0418	SCREW	1	
B209(3)		XTV3+10J	SCREW	2	
B210(3)		XTV3+10F	SCREW	1	
B211(3)		XTV3+8GFZ	SCREW	4	

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
300(4)		VQT6155	OPERATING INSTRUCTIONS	1	<!>
			(ENGLISH/FRENCH/DUTCH)		
300(4)		VQT6156	OPERATING INSTRUCTIONS	1	<!>
			(GERMAN/ITALIAN)		
301(4)		VEQ1677	REMOTE CONTROLLER	1	
304(4)		VJA0710	DIN RF CABLE	1	
305(4)		VJA0664	AC CORD	1	<!>
306(4)		VJA0231	AUDIO CABLE	1	
307(4)		VJA0658	S-VIDEO 4P CABLE	1	
308(4)		VJA0787	EDIT 5P CABLE	1	
309(4)		VPN3773	ACCESSORIES PAD	1	
310(4)		VPK0825	ACCESSORIES PAKING	1	
311(4)		VPN4184	CUSHION (R)	1	
312(4)		VPN4185	CUSHION (L)	1	
315(4)		VPG8048	PACKING	1	
			SERVICE FIXTURES & TOOLS		
		VFJ8125H3F	VHS ALIGNMENT TAPE(PAL)	1	
		VFK0335	RETAINING RING REMOVER	1	
			(3mm/4mm)		
		VFK0329	POST ADJUSTMENT SCREWDRIVER	1	
		VFK0326	HEX WRENCH SET	1	
		VFK0132	BACK TENSION METER	1	
		VFK27	HEAD CLEANING STICK	1	
		VFK1024	MORLYTONE GREASE	1	
		VFK0341	UPPER CYLINDER REMOVER	1	
		VFK0680	WHITE GREASE	1	
		VFK0851	CENTRE FIXING TOOL	1	
		VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	
		VFK1139	20P EXTENSION CABLE	1	
		VFK0678	18P EXTENSION CABLE	1	
		VFK0917	11P EXTENSION CABLE	1	
		VFK0918	17P EXTENSION CABLE	1	

❹ PACKIN





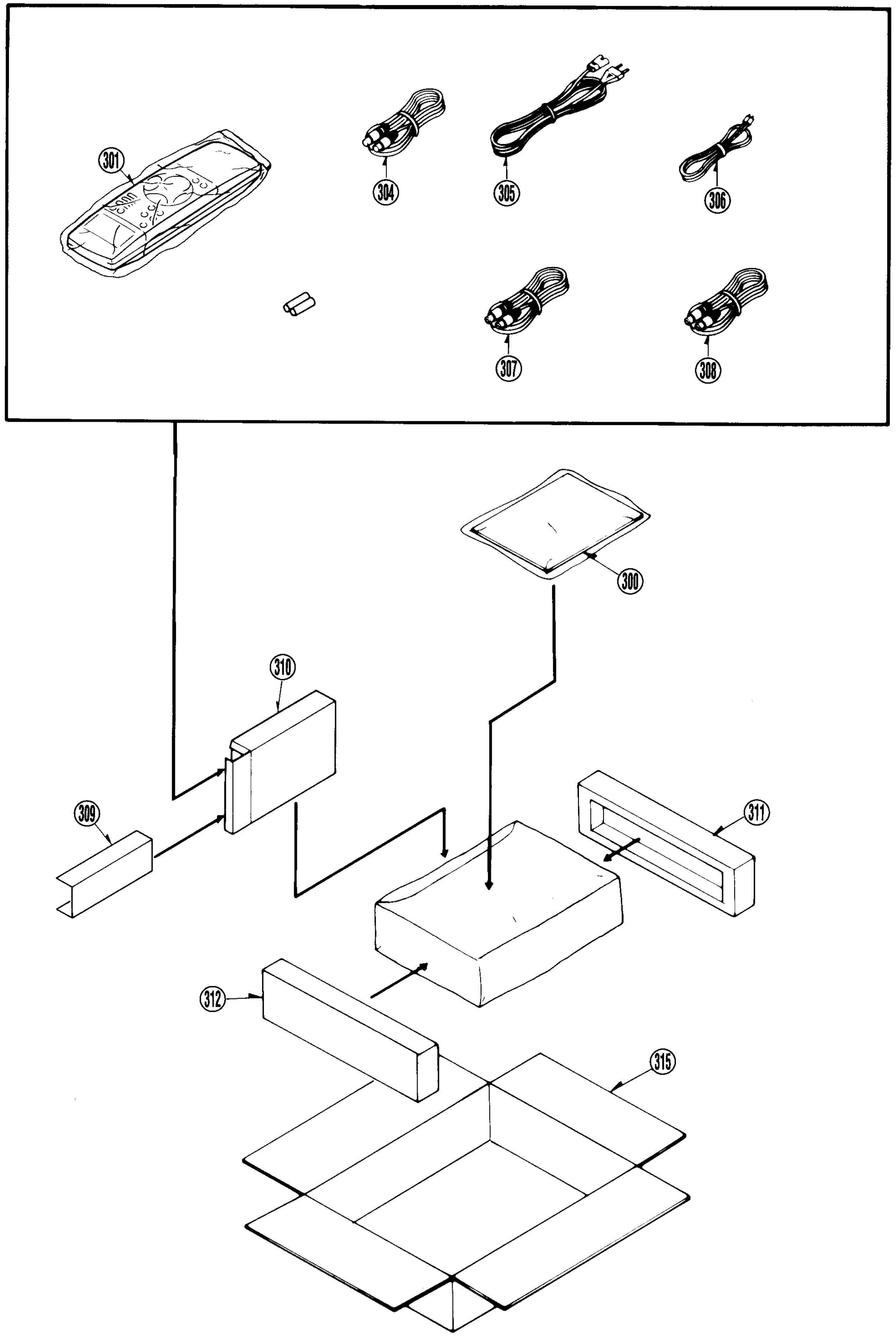
Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
200(3)		VGM1150	TOP PANEL	1	
201(3)		VYP5931	FRONT PANEL (1) UNIT	1	
202(3)		VGQ2216	DOOR MAGNET	2	
203(3)		VKF2500	BLINDER PANEL	1	
205(3)		VMB2521	BLINDER SPRING	1	
206(3)		VMT0502	BLINDER CUSHION	1	
207(3)		VKA0197	LEG	2	
208(3)		VKA0122	FOOT	2	
210(3)		VYF2179	DOOR PANEL UNIT	2	
211(3)		VXA5429	DOOR ANGLE (R) UNIT	1	
212(3)		VXA5431	DOOR ANGLE (L) UNIT	1	
213(3)		VGU6966	JOG DIAL	1	
214(3)		VGU6967	SHUTTLE RING	1	
217(3)		VKU0412	BOTTOM PLATE	1	
218(3)		VJH0832	ANTENNA JACK PLATE	1	
219(3)		VMC1213	ANTENNA EARTH SPRING	1	
220(3)		VMP4717	AC PLATE	1	
221(3)		VMZ2394	POWER BARRIER	1	
222(3)		VSC4403	HEAT SINK	1	
223(3)		2SB1370YD01E	POWER TRANSISTOR	1	
224(3)		VJR3	CLAMPER	1	
225(3)		VMX2233	C.B.A. SPACER	1	
226(3)		VMC1062	JACK EARTH SPRING	1	
227(3)		VMC1065	POWER EARTH SPRING	1	
231(3)		VWJ0904	FLAT CARD CABLE 15P	1	P2004-P1507
232(3)		VWJ0954	FLAT CARD CABLE 32P	1	P3003-P7501
233(3)		VWJ0956	FLAT CARD CABLE 20P	1	P3001-P501
234(3)		VEE8564	WIRE CABLE	1	P2003-POWER TR.
235(3)		VEE9371	WIRE CABLE	1	P3902-P6502
236(3)		VEE9372	WIRE CABLE	1	P4001-P6503
237(3)		VEE9373	WIRE CABLE	1	P6002-P3901
238(3)		VEE9374	WIRE CABLE	1	P4002-P1509
239(3)		VEE9375	WIRE CABLE	1	P2002-P2902
B201(3)		XTW3+10TFZ	SCREW	4	
B202(3)		VHD0773	SCREW	2	
B203(3)		VHD0168	SCREW	3	
B204(3)		VHD0874	SCREW	1	
B205(3)		XTV26+8FR	SCREW	3	
B206(3)		XTV26+10F	SCREW	1	
B207(3)		XTN2+5GFZ	SCREW	4	
B208(3)		VHD0418	SCREW	1	
B209(3)		XTV3+10J	SCREW	2	
B210(3)		XTV3+10F	SCREW	1	
B211(3)		XTV3+8GFZ	SCREW	4	

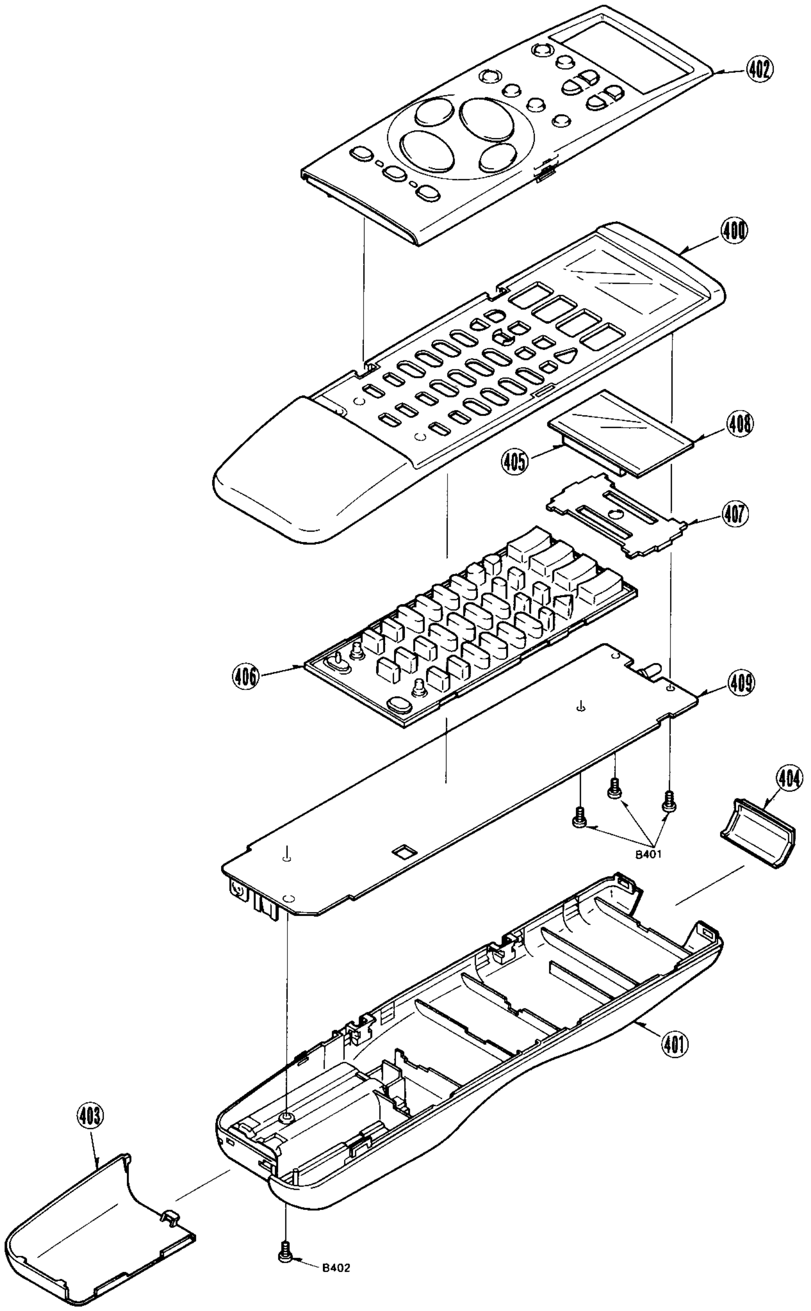
Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
300(4)		VQT6155	OPERATING INSTRUCTIONS	1	<!>
			(ENGLISH/FRENCH/DUTCH)		
300(4)		VQT6156	OPERATING INSTRUCTIONS	1	<!>
			(GERMAN/ITALIAN)		
301(4)		VEQ1677	REMOTE CONTROLLER	1	
304(4)		VJA0710	DIN RF CABLE	1	
305(4)		VJA0664	AC CORD	1	<!>
306(4)		VJA0231	AUDIO CABLE	1	
307(4)		VJA0658	S-VIDEO 4P CABLE	1	
308(4)		VJA0787	EDIT 5P CABLE	1	
309(4)		VPN3773	ACCESSORIES PAD	1	
310(4)		VPK0825	ACCESSORIES PAKING	1	
311(4)		VPN4184	CUSHION (R)	1	
312(4)		VPN4185	CUSHION (L)	1	
315(4)		VPG8048	PACKING	1	
			SERVICE FIXTURES & TOOLS		
		VFJ8125H3F	VHS ALIGNMENT TAPE(PAL)	1	
		VFK0335	RETAINING RING REMOVER	1	
			(3mm/4mm)		
		VFK0329	POST ADJUSTMENT SCREWDRIVER	1	
		VFK0326	HEX WRENCH SET	1	
		VFK0132	BACK TENSION METER	1	
		VFK27	HEAD CLEANING STICK	1	
		VFK1024	MORLYTONE GREASE	1	
		VFK0341	UPPER CYLINDER REMOVER	1	
		VFK0680	WHITE GREASE	1	
		VFK0851	CENTRE FIXING TOOL	1	
		VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	
		VFK1139	20P EXTENSION CABLE	1	
		VFK0678	18P EXTENSION CABLE	1	
		VFK0917	11P EXTENSION CABLE	1	
		VFK0918	17P EXTENSION CABLE	1	

❹ PACKING PARTS SECTION



❺ REMOTE CONTROLLER UNIT



Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
400(5)		VYK6514	TOP COVER UNIT	1	[SUPPLIED FROM MBV]
401(5)		VYK5446	BOTTOM COVER UNIT	1	
402(5)		VYK6367	DOOR PANEL UNIT	1	[SUPPLIED FROM MBV]
403(5)		VKF2115	BATTERY COVER	1	
404(5)		VKW1802	IR WINDOW	1	
405(5)		VSQ0830	CONDUCTIVE RUBBER	2	
406(5)		VSP0861	RUBBER CONTACT	1	[SUPPLIED FROM MBV]
407(5)		VSQ0829	LCD SPACER	1	
408(5)		VSL0319A	LCD	1	
409(5)		----------	REMOTE CONTROLLER C.B.A.	1	THE C.B.A. IS NOT
					SUPPLIED AS SPARE
					PART.
B401(5)		XTB2+6G	SCREW	3	
B402(5)		XTB2+8GFZ	SCREW	1	

5-2. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE : Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS , K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'▮'show below the main assembled parts.
5.The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP03B73A	MAIN C.B.A.	1	(RTL)
			(Page:5-8)		INCLUDING THE
					LUMINANCE &
					CHROMINANCE PACK
					C.B.A.(VEP03B74A),
					Hi-Fi AUDIO PACK
					C.B.A.(VEP04447PR),
					DECODER C.B.A.
					(VEP07784C),
					TV DEMODULATOR PACK
					C.B.A.(VEP07801U).
		VEP03B74A	LUMINANCE & CHROMINANCE	1	(RTL)
			PACK C.B.A.		INCLUDED IN MAIN
					C.B.A.(VEP03B73A).
		VEP04447PR	Hi-Fi AUDIO PACK C.B.A.	1	(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP03B73A).
		VEP07784C	DECODER C.B.A.	1	(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP03B73A).
		VEP07801U	TV DEMODULATOR PACK C.B.A.	1	(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP03B73A).
		VEP03B75A	INPUT/OUTPUT PACK C.B.A	1	(RTL)
			(Page:5-16)		
		VEP05176G	HEAD AMP C.B.A.	1	(RTL)
			(Page:5-17)		
		VEP06A17A	VR C.B.A.	1	(RTL)
			(Page:5-18)		INCLUDING THE
					FRONT JACK C.B.A.
					(VEP04531A).
		VEP04531A	FRONT JACK C.B.A.	1	(RTL)
					INCLUDED IN VR C.B.A.
					(VEP06A17A).
		VEP07808A	TIMER C.B.A.	1	(RTL)
			(Page:5-18)		
		VEP01639A	POWER C.B.A.	1	(RTL) <!>
			(Page:5-19)		
		VEX0231	CYLINDER DRIVE C.B.A.	1	(RTL)
			(Page:5-20)		
		----------	MOTOR C.B.A.	1	C.B.A. IS INCLUDED
			(Page:5-20)		IN LOADING MOTOR (1)
					UNIT (VEM0427).
DU7601		ENG47210G	TUNER	1	<!>
F1101		XBA2C16TH15	FUSE	1	<!>
	▮	VEP03B73A	MAIN C.B.A.		(RTL)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C301		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C302		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C303		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C304		ECEA0JKA220	E.CAPACITOR 6.3V 220U	1	
C305		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C306		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C307		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C308		ECUM1H050CCN	C.CAPACITOR CH 50V 5P	1	
C310		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C311		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C312		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C313		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C318		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C319		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C321,22		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C324		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C325,26		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C329		ECEA1HKAR33	E.CAPACITOR 50V 0.33U	1	
C331		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C332		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C335		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C336		ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	1	
C337		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C340		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C341		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C344		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C345,46		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C348		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C352		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C353,54		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C0701,02		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C0704		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C0706		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C0707,08		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C0709		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C0710		ECUX1H470JPV	C.CAPACITOR CH 50V 47P	1	
C0711		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C0712		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C0714		ECQB1H473JF	P.CAPACITOR 50V 0.047U	1	
C0715		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C0716		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C0717		ECUX1H270JPV	C.CAPACITOR CH 50V 27P	1	
C0718		ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C0719		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C0720		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C0723		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C0726		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C0730		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C0732		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C801		ECUM1H681JCN	C.CAPACITOR CH 50V 680P	1	
C802		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C803		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C804		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C805		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C808		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C809		ECEA1HKA4R7	E.CAPACITOR 50V 4.7U	1	
C810		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C812,13		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C814		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C815		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C816		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C817		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C818		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C819		ECQB1H332JZ	F.CAPACITOR 50V 3300P	1	
C820		ECUM1H331JCN	C.CAPACITOR CH 50V 330P	1	
C821-23		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C824		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C825-27		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C828,29		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	2	
C830		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C831		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C832		ECQV1H154JM	P.CAPACITOR 50V 0.15U	1	
C833		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C836		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C839		ECEA1HKA4R7	E.CAPACITOR 50V 4.7U	1	
C840		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C841		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C842		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C843		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C845		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C846		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C847		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C848		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C849		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C850		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C851-53		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C854		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C855-57		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C858		ECUM1H681JCN	C.CAPACITOR CH 50V 680P	1	
C1001		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1002		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C1003		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C1004		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1005		ECEA1AKA220	E.CAPACITOR 10V 22U	1	
C1006		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C1007		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1008		ECEA1AKA220	E.CAPACITOR 10V 22U	1	
C1009		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C1013		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C1018		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1020		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C1021		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1022		ECEA1AKA220	E.CAPACITOR 10V 22U	1	
C1023		VCE0073	E.CAPACITOR	1	
C2004		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C2005		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C2006		ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C2007,08		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C2009,10		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C2011		ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	1	
C2012,13		ECEA1EKN3R3	E.CAPACITOR 25V 3.3U	2	
C2014		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2015		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C2016		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C2017		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2018		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C2019		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C2020		ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C2021		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2022,23		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C2027		ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C2028		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C2029		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C2030		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2501,02		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	2	
C2503		ECA1EM470	E.CAPACITOR 25V 47U	1	
C2504		ECEA1HKNR22	E.CAPACITOR 50V 0.22U	1	
C2505		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C2507,08		ECUM1E333KBN	C.CAPACITOR CH 25V 0.33U	2	
C2509		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2510		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2513-15		ECUM1E333KBN	C.CAPACITOR CH 25V 0.33U	3	
C2516,17		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C2518,19		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	2	
C2521		ECA1CM221	E.CAPACITOR 16V 220U	1	
C2522		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	1	
C2523		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C2524		ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C3001,02		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C3003		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C3004		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3005		ECA0JM331	E.CAPACITOR 6.3V 330U	1	
C3006-08		ECEA1HKA010	E.CAPACITOR 50V 1U	3	
C3009		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3010		ECA0JM331	E.CAPACITOR 6.3V 330U	1	
C3011		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3012		ECA0JM331	E.CAPACITOR 6.3V 330U	1	
C3013		ECEA1CKA100	E.CAPACITOR 16V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C3016		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3017		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C3018		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C3019		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C3020-22		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C3023		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C3024		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C3025		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C3026		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C3027		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3029		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3030		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3032,33		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C3034		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C3035		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3036		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C3037		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3039,40		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C3041,42		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	2	
C3043		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3044		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C3046,47		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C3048		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	1	
C3050		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3052-56		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	5	
C3057		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3058		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3059		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3060,61		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C3062		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C3063		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3064		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C3065		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C3066		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3067		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C3068		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3069		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3070		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3073,74		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C3075,76		ECEA1AKA330	E.CAPACITOR 10V 33U	2	
C3077		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3079		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3080		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C3081-84		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	4	
C3085		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3086		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3087-89		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	3	
C3091		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C3092		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3093		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4001		ECEA1AKA220	E.CAPACITOR 10V 22U	1	
C4002		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C4003		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C4004,05		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C4006,07		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C4008		ECCD2H181J	C.CAPACITOR 500V 180P	1	
C4009		ECQP1222JZ	P.CAPACITOR 100V 2200P	1	
C4010		ECQB1H223JF	P.CAPACITOR 50V 0.022U	1	
C4011		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4012		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C4013		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4022		ECQB1H102JZ	F.CAPACITOR 50V 1000P	1	
C4023		ECQB1H103JZ	P.CAPACITOR 50V 0.01U	1	
C4024		ECEA16M33	E.CAPACITOR 16V 33U	1	
C4025		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C4027		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4028		ECQB1H472JF	F.CAPACITOR 50V 4700P	1	
C4029		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C4030		ECEA1AKA101	E.CAPACITOR 10V 100U	1	
C4031		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C4032		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C4501		ECQB1H152JZ	F.CAPACITOR 50V 1500P	1	
C4502		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4503		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4504,05		ECEA1CU470	E.CAPACITOR 16V 47U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4506		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C4507		ECQB1H223JF	P.CAPACITOR 50V 0.022U	1	
C4508		ECEA1EBZ4R7	E.CAPACITOR 25V 4.7U	1	
C4509		ECEA1AU470	E.CAPACITOR 10V 47U	1	
C4510		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C4511		ECQB1H332JF	P.CAPACITOR 50V 3300P	1	
C4512		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4513		ECUX1H681JV	C.CAPACITOR CH 50V 680P	1	
C4514		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4515		ECEA1EU4R7	E.CAPACITOR 25V 4.7U	1	
C4517		ECEA1AU101	E.CAPACITOR 10V 100U	1	
C4518		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4521		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4522		ECEA1HU3R3	E.CAPACITOR 50V 3.3U	1	
C4528		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4530		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
C4533		ECEA1CU330	E.CAPACITOR 16V 33U	1	
C4537		ECUX1H102JCV	C.CAPACITOR CH 50V 1000P	1	
C4538		ECEA1HUR47	E.CAPACITOR 50V 0.47U	1	
C4539		ECUX1C224ZFV	C.CAPACITOR CH 16V 0.22U	1	
C4541		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4545		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4551		ECQB1H223JF	P.CAPACITOR 50V 0.022U	1	
C4552		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4556		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C4558		ECEA1EBZ4R7	E.CAPACITOR 25V 4.7U	1	
C4559		ECEA1AU470	E.CAPACITOR 10V 47U	1	
C4560		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C4561		ECQB1H332JF	P.CAPACITOR 50V 3300P	1	
C4562		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4563		ECUX1H681JV	C.CAPACITOR CH 50V 680P	1	
C4564		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4565		ECEA1EU4R7	E.CAPACITOR 25V 4.7U	1	
C4567		ECEA1AU101	E.CAPACITOR 10V 100U	1	
C4568		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4572		ECEA1HU3R3	E.CAPACITOR 50V 3.3U	1	
C4576		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4583		ECEA1CU330	E.CAPACITOR 16V 33U	1	
C4585,86		ECEA1AU101	E.CAPACITOR 10V 100U	2	
C4591		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4592		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4593		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C4594,95		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C4596		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C4597		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C4598		ECUX1H102JCV	C.CAPACITOR CH 50V 1000P	1	
C4604		ECUM1H182JN	C.CAPACITOR CH 50V 1800P	1	
C4606		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
C4611		ECQB1H182JZ	F.CAPACITOR 50V 1800P	1	
C4613		ECUX1H821JCV	C.CAPACITOR CH 50V 820P	1	
C4616		ECUX1H102ZFV	C.CAPACITOR CH 50V 1000P	1	
C4617		ECEA1OM22	E.CAPACITOR 10V 22U	1	
C4618		ECQB1H822JZ	F.CAPACITOR 50V 8200P	1	
C4621		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C4629		ECQB1H562JZ	P.CAPACITOR 50V 5600P	1	
C4636		ECUX1H471JV	C.CAPACITOR CH 50V 470P	1	
C4638		ECQB1H822JZ	F.CAPACITOR 50V 8200P	1	
C4652,53		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C6001		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6002		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	1	
C6004		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C6005		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C6006		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6007		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6008		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C6009		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C6010		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6011		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6012,13		ECEA0JKA470	E.CAPACITOR 6.3V 47U	2	
C6014,15		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C6016		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6018		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6019-22		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	4	
C6023,24		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C6026		ECA1EM470	E.CAPACITOR 25V 47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C6027		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C6028,29		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C6030-32		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C6033,34		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C6035		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6036		ECUM1H561JCN	C.CAPACITOR CH 50V 560P	1	
C6701		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6702-07		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	6	
C6708		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6709		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C6710		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6711		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6712		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C6713		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C6714		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6715		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C6716		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6717		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6718		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C6719,20		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C6721		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C6722		ECUM1H473ZFN	C.CAPACITOR CH 50V 0.047U	1	
C6723		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6725		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C6726		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C6727		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C6728-30		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C6731		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6732		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6733,34		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C6735		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6736		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6737		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	1	
C6738,39		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C6740		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C6741-43		ECEA1HKA010	E.CAPACITOR 50V 1U	3	
C6745		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6746		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	1	
C6748		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C6749		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6750		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7302		ECEA1HKN2R2	E.CAPACITOR 50V 2.2U	1	
C7304		ECEA1HKN2R2	E.CAPACITOR 50V 2.2U	1	
C7308		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C7309		ECUM1H152KBN	C.CAPACITOR CH 50V 1500P	1	
C7310		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C7311		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C7312		ECQB1H103JZ	P.CAPACITOR 50V 0.01U	1	
C7313		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C7314,15		ECQB1H103JZ	P.CAPACITOR 50V 0.01U	2	
C7320,21		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C7323-25		ECUM1H153KBM	C.CAPACITOR CH 50V 0.015U	3	
C7326		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7328		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C7330		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C7332,33		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C7337		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7339		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7340		ECUM1H390JPN	C.CAPACITOR CH 50V 39P	1	
C7341		ECUX1H070DCV	C.CAPACITOR CH 50V 7P	1	
C7345		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7346		ECUM1H390JPN	C.CAPACITOR CH 50V 39P	1	
C7347		ECUX1H070DCV	C.CAPACITOR CH 50V 7P	1	
C7349,50		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	2	
C7352		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7353		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C7601,02		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7603		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C7604		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C7605		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7606		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C7607		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7608,09		ECEA0JKA101	E.CAPACITOR 6.3V 100U	2	
C7610		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7611		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C7614		ECEA1HKA100	E.CAPACITOR 50V 10U	1	
C7615		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
D301		1SS283	DIODE	1	
D302		MA723VT	DIODE	1	
D303		MA151WK	DIODE	1	
D305		1SS254	DIODE	1	
D306		MA723VT	DIODE	1	
D307		1SS254	DIODE	1	
D308		MA151K	DIODE	1	
D801,02		1SS254	DIODE	2	
D804		1SS254	DIODE	1	
D806,07		1SS254	DIODE	2	
D808		MA151WK	DIODE	1	
D812		MA151WK	DIODE	1	
D813		MA151K	DIODE	1	
D814,15		1SS254	DIODE	2	
D1001		MA4110H	DIODE	1	
D1002,03		1SS254	DIODE	2	
D1004		MA4051M	DIODE	1	
D1005		1SS254	DIODE	1	
D1006		MA4051-L	DIODE	1	
D1007		1SS254	DIODE	1	
D1008		MA151WA	DIODE	1	
D1010,11		MA723VT	DIODE	2	
D2002-04		1SS254	DIODE	3	
D2007		1SS254	DIODE	1	
D2501		MA157	DIODE	1	
D2503		11ES1	DIODE	1	
D2504,05		1SS254	DIODE	2	
D3002		MA723VT	DIODE	1	
D3005,06		1SS254	DIODE	2	
D3007		MA151K	DIODE	1	
D3009		1SS254	DIODE	1	
D3011		MA151K	DIODE	1	
D3012-16		1SS254	DIODE	5	
D4001		MA151K	DIODE	1	
D4002		1SS254	DIODE	1	
D4005		MA4075	DIODE	1	
D4006		MA151K	DIODE	1	
D4501-04		MA141K	DIODE	4	
D4601,02		MA141K	DIODE	2	
D6001		1SS254	DIODE	1	
D6003		1SS254	DIODE	1	
D6004		MA4075-L	DIODE	1	
D6005		LN59LT.VT	LED	1	
D6011,12		1SS254	DIODE	2	
D6701,02		1SS254	DIODE	2	
D7304		MA29T-B	DIODE	1	
D7305		1SS254	DIODE	1	
D7307		MA151K	DIODE	1	
D7601		MA4300M	DIODE	1	
DL802		EFDWLA13A	DELAY	1	
DL6701		ELB4Y026	FILTER	1	
DU7601		ENG47210G	TUNER	1	<!>
FL301		ELB4M022	FILTER	1	
FL302		VLF0639	FILTER	1	
FL303		ELB4R042	FILTER	1	
FL801		VLF1079	FILTER	1	
FL3001		VLF0765	FILTER	1	
FL3002		VLF1120	FILTER	1	
FL7601		ELB4H020	FILTER	1	
IC301		VCR0390	IC	1	
IC302		MN3859S	IC	1	
IC303		AN1358S	IC	1	
IC0701		LA7576	IC	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC801		VCR0383	IC	1	
IC802		M52352FP	IC	1	
IC803		TA1225N	IC	1	
IC2501		BA6871BS	IC	1	
IC3001		AN3581S	IC	1	
IC3003		M52376FP	IC	1	
IC3004		NJM2233BMA	IC	1	
IC3005		HA17431PA	IC	1	
IC3006		M52055FP	IC	1	
IC3007		AN3916	IC	1	
IC3008		UPC78L05J	IC	1	
IC4001		NJM4565DD	IC	1	
IC4501		XLH7773AKS	IC	1	
IC4601		BA7755AF	IC	1	
IC6001		MN6755486H4H	IC	1	
IC6002,03		ON1387T	IC	2	
IC6004		BA6887-V3	IC	1	
IC6701		MC74HC161AF2	IC	1	
IC6702		ST24C08CB1	IC	1	
IC6703		MC74HC164FL2	IC	1	
IC6704		SAA5281ZPM3	IC	1	
IC6705		TDA8501	IC	1	
IC6706		P83C528MAAA	IC	1	
IC6707		M52055FP	IC	1	
IC6708		MC74HC573AF2	IC	1	
IC6709		NJM2234MA	IC	1	
IC6710		M27C512MFGA	IC	1	
IC6711		NJM2235MA	IC	1	
IC6712		UPC393G2	IC	1	
IC7301		TDA9845	IC	1	
IC7302		TA8721SN	IC	1	
K2		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
K4		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
K6		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
K301		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K0702		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
K0704,05		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
K1004		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K2001,02		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	2	
K6004		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K6701		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K6703,04		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	2	
K7302		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
K7316		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
K7602		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
L302		VLQ0188J180	COIL 18UH	1	
L304		VLQ0599J270	COIL 27UH	1	
L306		VLQ0188J390	COIL 39UH	1	
L309,10		VLQ0599J680	COIL 68UH	2	
L312		VLQ0599J330	COIL 33UH	1	
L313		VLQ0599J560	COIL 56UH	1	
L0701,02		ELJNAR10MF	COIL	2	
L0705		VLQ0163J5R6	COIL 5.6UH	1	
L0706		VLQEL05T120	COIL 12UH	1	
L801,02		ELESE681KA	COIL 680UH	2	
L803		ELESN331KA	COIL	1	
L804		VLQ0599J680	COIL 68UH	1	
L806		VLQ0599J680	COIL 68UH	1	
L809		VLQ0599J680	COIL 68UH	1	
L810		VLQ0188J150	COIL 15UH	1	
L811		VLQ0188J151	COIL 150UH	1	
L812		VLQ0188J270	COIL 27UH	1	
L814		VLQ0188J150	COIL 15UH	1	
L815-17		VLQ0599J680	COIL 68UH	3	
L2001		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
L2005		VLQ0569	COIL	1	
L2501		ELESE102KA	COIL 1000UH	1	
L3001		VLQ0599J680	COIL 68UH	1	
L3002		ELESE681KA	COIL 680UH	1	
L3003		VLQ0599J680	COIL 68UH	1	
L3004		VLQ0599J470	COIL 47UH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L3005		VLQ0599J120	COIL 120UH	1	
L3006		VLQ0599J100	COIL 10UH	1	
L3007		VLQ0599J120	COIL 120UH	1	
L3008		VLQ0599J680	COIL 68UH	1	
L3009		VLQ0599J270	COIL 27UH	1	
L3010		VLQ0599J820	COIL 82UH	1	
L3012		VLQ0599J181	COIL 180UH	1	
L3013		VLQ0599J151	COIL 150H	1	
L3017		VLQ0599J270	COIL 27UH	1	
L3018		VLQ0599J680	COIL 68UH	1	
L4001		VLQ0599J680	COIL 68UH	1	
L4002		ELESE471KA	COIL 470UH	1	
L4501,02		ELESE101KA	COIL 100UH	2	
L4601		VLQEL07F153J	COIL	1	
L6001-03		VLQ0599J680	COIL 68UH	3	
L6004		VLP0074	COIL	1	
L6006-12		VLP0145	COIL	7	
L6701		VLP0083	COIL	1	
L6702		VLQ0599J680	COIL 68UH	1	
L6703		ELESE3R3KA	COIL 3.3UH	1	
L6704		VLQ0599J680	COIL 68UH	1	
L6705		VLQ0599J390	COIL 39UH	1	
L6706-08		VLP0083	COIL	3	
L6709		VLQ0599J680	COIL 68UH	1	
L7601,02		VLQ0599J1R0	COIL 1UH	2	
L7603-05		VLQ0599J680	COIL 68UH	3	
L7607		VLQ0599J680	COIL 68UH	1	
L7608		VLQ0599J2R7	COIL 2.7UH	1	
LB3001		VLP0085	COIL	1	
P1001		VJS3631E011A	CONNECTOR (FEMALE) 11P	1	
P2002		VJP1232T	CONNECTOR (MALE) 5P	1	
P2003		VJP3483	CONNECTOR (MALE)	1	
P2004		VJS3537A015G	CONNECTOR (FEMALE) 15P	1	
P3001		VJS3537A020G	CONNECTOR (FEMALE) 20P	1	
P3003		VJS3537A032G	CONNECTOR (FEMALE) 32P	1	
P4001		VJP1932T	CONNECTOR (MALE)	1	
P4002		TJS118601T	CONNECTOR (FMAALE)	1	
P4003		VJS3675A006G	CONNECTOR (FEMALE) 6P	1	
P6001		VJS3821	CONNECTOR (FEMALE) 4P	1	
P6002		VJP1230T	CONNECTOR (MALE) 3P	1	
P6003		VJS3640A002	CONNECTOR (FEMALE) 2P	1	
PK301		VJR0777B009W	CONNECTOR 9P	1	
PK302		VJR0777B012W	CONNECTOR 12P	1	
PK303		VJR0777B011W	CONNECTOR 11P	1	
PK0701		VJR0816A010W	CONNECTOR 10P	1	
PK4001-03		VJR0757B018T	CONNECTOR 18P	3	
PK7301		VJR0777B007W	CONNECTOR 7P	1	
PK7302		VJR0777B005W	CONNECTOR 5P	1	
PP0701		VJP3589A004B	CONNECTOR (MALE) 4P	1	
PP3001		VJP3043A012W	CONNECTOR (MALE) 12P	1	
PP3002		VJP3043A010W	CONNECTOR (MALE) 10P	1	
PP3003,04		VJP3043G011W	CONNECTOR (MALE) 11P	2	
Q301		MSC2295	TRANSISTOR	1	
Q302		MSB709	TRANSISTOR	1	
Q303,04		MSC2295	TRANSISTOR	2	
Q305		MSD601	TRANSISTOR	1	
Q306		MSC2295	TRANSISTOR	1	
Q308		MSB709	TRANSISTOR	1	
Q309,10		MSD601	TRANSISTOR	2	
Q311		MSB709	TRANSISTOR	1	
Q0701		MSD601-S	TRANSISTOR	1	
Q0702		MSB709	TRANSISTOR	1	
Q803		MSB709	TRANSISTOR	1	
Q804		MSC2295	TRANSISTOR	1	
Q805		MSD601	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q1001		2SD25440PQA	TRANSISTOR	1	
Q1002,03		2SD1996	TRANSISTOR	2	
Q1004		2SB1321A	TRANSISTOR	1	
Q1005		2SD1991A	TRANSISTOR	1	
Q1006		2SD602A	TRANSISTOR	1	
Q1007		2SD601A	TRANSISTOR	1	
Q1008,09		2SD1996	TRANSISTOR	2	
Q1010		2SD1328	TRANSISTOR	1	
Q3001		MSD602	TRANSISTOR	1	
Q3003		MSD601	TRANSISTOR	1	
Q3005,06		MSB709	TRANSISTOR	2	
Q3007,08		MSD601	TRANSISTOR	2	
Q3009,10		MSC2295	TRANSISTOR	2	
Q3011		MSD602	TRANSISTOR	1	
Q3012		MSB710	TRANSISTOR	1	
Q3013		MSD602	TRANSISTOR	1	
Q3014		MSB710	TRANSISTOR	1	
Q3015,16		MSD601	TRANSISTOR	2	
Q3017		MSB709	TRANSISTOR	1	
Q3018		MSD601	TRANSISTOR	1	
Q3019		2SD1996	TRANSISTOR	1	
Q3021		MSC2295	TRANSISTOR	1	
Q3022		MSB709	TRANSISTOR	1	
Q4002		2SD601A	TRANSISTOR	1	
Q4006		MSB710	TRANSISTOR	1	
Q4007,08		MSD601	TRANSISTOR	2	
Q4009		2SD602A-R	TRANSISTOR	1	
Q4010		MSB710	TRANSISTOR	1	
Q4011		2SD601A	TRANSISTOR	1	
Q4012		2SD1328	TRANSISTOR	1	
Q4501		2SD655TZ	TRANSISTOR	1	
Q4551		2SB561	TRANSISTOR	1	
Q4552		2SD1819A	TRANSISTOR	1	
Q4601,02		2SD1819A	TRANSISTOR	2	
Q6001		MSB709	TRANSISTOR	1	
Q6002,03		PN205LT-NCVT	PHOTO TRANSISTOR	2	
Q6004		MSD601	TRANSISTOR	1	
Q7301		MSD601-S	TRANSISTOR	1	
QR301		MUN2211	TRANSISTOR-RESISTOR	1	
QR302		MUN2212	TRANSISTOR-RESISTOR	1	
QR303		MUN2213	TRANSISTOR-RESISTOR	1	
QR304		MUN2211	TRANSISTOR-RESISTOR	1	
QR305		MUN2113	TRANSISTOR-RESISTOR	1	
QR307,08		MUN2213	TRANSISTOR-RESISTOR	2	
QR309		MUN2211	TRANSISTOR-RESISTOR	1	
QR310		MUN2213	TRANSISTOR-RESISTOR	1	
QR311		MUN2113	TRANSISTOR-RESISTOR	1	
QR312		MUN2111	TRANSISTOR-RESISTOR	1	
QR313,14		MUN2213	TRANSISTOR-RESISTOR	2	
QR315		MUN2113	TRANSISTOR-RESISTOR	1	
QR316		XN6213	TRANSISTOR-TRANSISTOR	1	
QR320		MUN2211	TRANSISTOR-RESISTOR	1	
QR321		UN4213	TRANSISTOR-RESISTOR	1	
QR323		MUN2213	TRANSISTOR-RESISTOR	1	
QR801,02		MUN2213	TRANSISTOR-RESISTOR	2	
QR803		MUN2212	TRANSISTOR-RESISTOR	1	
QR805		MUN2213	TRANSISTOR-RESISTOR	1	
QR806		MUN2111	TRANSISTOR-RESISTOR	1	
QR807		MUN2213	TRANSISTOR-RESISTOR	1	
QR1001		MUN2111	TRANSISTOR-RESISTOR	1	
QR1002		MUN2213	TRANSISTOR-RESISTOR	1	
QR1003		MUN2211	TRANSISTOR-RESISTOR	1	
QR2001,02		MUN2213	TRANSISTOR-RESISTOR	2	
QR2003		MUN2112	TRANSISTOR-RESISTOR	1	
QR2004		UN2116	TRANSISTOR-RESISTOR	1	
QR3001		MUN2211	TRANSISTOR-RESISTOR	1	
QR3004		MUN2211	TRANSISTOR-RESISTOR	1	
QR3006-08		MUN2212	TRANSISTOR-RESISTOR	3	
QR3009		MUN2111	TRANSISTOR-RESISTOR	1	
QR3010		MUN2213	TRANSISTOR-RESISTOR	1	
QR3011		MUN2212	TRANSISTOR-RESISTOR	1	
QR3012		DTC363EK	TRANSISTOR-RESISTOR	1	
QR3013		MUN2211	TRANSISTOR-RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
QR3015		MUN2212	TRANSISTOR-RESISTOR	1	
QR3016,17		MUN2211	TRANSISTOR-RESISTOR	2	
QR3020		MUN2111	TRANSISTOR-RESISTOR	1	
QR3021		MUN2211	TRANSISTOR-RESISTOR	1	
QR4001		MUN2211	TRANSISTOR-RESISTOR	1	
QR4002-04		MUN2213	TRANSISTOR-RESISTOR	3	
QR4005		MUN2212	TRANSISTOR-RESISTOR	1	
QR4006		MUN2211	TRANSISTOR-RESISTOR	1	
QR4007		MUN2212	TRANSISTOR-RESISTOR	1	
QR4008		MUN2211	TRANSISTOR-RESISTOR	1	
QR4508,09		UN5113	TRANSISTOR-RESISTOR	2	
QR4510		UN5212	TRANSISTOR-RESISTOR	1	
QR4602		UN5111	TRANSISTOR-RESISTOR	1	
QR4603		UN5213	TRANSISTOR-RESISTOR	1	
QR6002,03		MUN2211	TRANSISTOR-RESISTOR	2	
QR6006		MUN2212	TRANSISTOR-RESISTOR	1	
QR6007		XN1211	TRANSISTOR-TRANSISTOR	1	
QR6701		UN2216	TRANSISTOR-RESISTOR	1	
QR6702		UN2215	TRANSISTOR-RESISTOR	1	
QR7304		MUN2213	TRANSISTOR-RESISTOR	1	
QR7601		MUN2213	TRANSISTOR-RESISTOR	1	
R301		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R302		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R303		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R304		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R305		ERJ6GMZOROO	M.RESISTOR CH 1/10W 0	1	
R307		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R308		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R309		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R310		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R311		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R312		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R313		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R314		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R315		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R316		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R317		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R318		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R319		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R320		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R321		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R322		ERJ6GMYG242	M.RESISTOR CH 1/10W 2.4K	1	
R323		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R324		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R326		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R327		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R328		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R329		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R330		ERJ6GMYG682	M.RESISTOR CH 1/10W 6.8K	1	
R331		ERJ6GMYJ362	M.RESISTOR CH 1/10W 3.6K	1	
R333		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R334		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R335		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R336		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R337		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R338,39		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R340		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R341		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R342		ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R343		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R344		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R345		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R346		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R347		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R348		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R349		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R351		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R352		ERJ6GMYG183	M.RESISTOR CH 1/10W 18K	1	
R353		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R354		ERJ6GMYG753	M.RESISTOR CH 1/10W 75K	1	
R355		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R358		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R359		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R365		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R366		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R0702		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R0704		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R0705		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R0706,07		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R0708		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R0709		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R0710		ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	1	
R0713		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R0714		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R0715		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R0716		VREOO40E151	M.RESISTOR CH 1/10W 150	1	
R0717		ERJ3GEYOROO	M.RESISTOR CH 1/16W 0	1	
R0718		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R0719		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R0720		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R0722		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R0728		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R0729		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R0732		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R0783		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R801		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R802		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R803		ERJ6GMYJ242	M.RESISTOR CH 1/10W 2.4K	1	
R804,05		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R809		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R810,11		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R814		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R817		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R818		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R827		ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R828		ERJ6GMYJ204	M.RESISTOR CH 1/10W 200K	1	
R829		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R830		ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R831		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R832		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R833		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R834		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R835,36		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R837		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R838,39		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	2	
R840		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R841		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R842,43		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	2	
R844		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R845		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R847		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R848		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R849		ERJ6GMYK395	M.RESISTOR CH 1/10W 3.9M	1	
R850		ERJ6GMYJ302	M.RESISTOR CH 1/10W 3K	1	
R851		ERJ6GMZOROO	M.RESISTOR CH 1/10W 0	1	
R852		ERJ6GMYJ203	M.RESISTOR CH 1/10W 20K	1	
R856		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R859,60		ERJ6GMZOROO	M.RESISTOR CH 1/10W 0	2	
R861		ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R862		ERJ6GMYG122	M.RESISTOR CH 1/10W 1.2K	1	
R863		ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R864		ERJ6GMYG101	M.RESISTOR CH 1/10W 100	1	
R865		ERJ6GMYJ470	M.RESISTOR CH 1/10W 47	1	
R866		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R867		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R1001		ERDS1TJ272	C.RESISTOR 1/2W 2.7K	1	
R1002		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R1003		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1004,05		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R1006		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R1007		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R1008		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R1009		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R1010		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R1011		ERDS2TJ391	C.RESISTOR 1/4W 390	1	
R1012		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R1013,14		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	2	
R1015		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1016		ERDS2TJ122	C.RESISTOR 1/4W 1.2K	1	
R1017		ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R1018		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2001		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2002		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R2003-05		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	3	
R2006		ERJ6GMZOROO	M.RESISTOR CH 1/10W 0	1	
R2007		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R2008		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R2009		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2010-12		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	3	
R2013		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2014		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2015		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R2016		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2017		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R2018		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2019		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2020		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2501,02		ERDS2TJ560	C.RESISTOR 1/4W 56	2	
R2503		ERDS1TJ561	C.RESISTOR 1/2W 560	1	
R2504		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2505		ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R2506		ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R2507,08		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	2	
R2509,10		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	2	
R2511		ERDS2TJ560	C.RESISTOR 1/4W 56	1	
R2512		ERX12SJR47	M.RESISTOR 1/2W 0.47	1	
R2514		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R2515		ERJ6GMYG681	M.RESISTOR CH 1/10W 680	1	
R2517		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2520		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2521		ERJ6GMYJ684	M.RESISTOR CH 1/10W 680K	1	
R2522		ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R2523		ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R3001		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3002		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3003		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3004		ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R3005		ERJ6GMYG471	M.RESISTOR CH 1/10W 470	1	
R3006		ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R3007		ERJ6GMYG911	M.RESISTOR CH 1/10W 910	1	
R3009		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3010		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3011		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3012,13		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3014		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3015		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3016		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3017		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3018		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3019		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3020		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R3021		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3022		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R3023		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3024		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3025		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R3026,27		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	2	
R3028		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R3029		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3030		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3031		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3032		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R3034		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3035		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3036		ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R3037		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3038		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R3039		ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R3040		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3041		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R3042,43		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3044		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R3045		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3046		ERJ6GMYG682	M.RESISTOR CH 1/10W 6.8K	1	
R3047		ERJ6GMYG752	M.RESISTOR CH 1/10W 7.5K	1	
R3048		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3049		ERJ6GMYG472	M.RESISTOR CH 1/10W 4.7K	1	
R3050		ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R3051		ERJ6GMYG622	M.RESISTOR CH 1/10W 6.2K	1	
R3052		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R3053		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R3054		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3055		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3056		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3057		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3058		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3060		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3061		ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R3062		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R3063		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3064,65		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3066		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3068		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3069		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3070		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3072		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3073		ERJ6GMYJ112	M.RESISTOR CH 1/10W 1.1K	1	
R3076		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3077		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3078		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3079		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R3080		ERJ6GMYJ203	M.RESISTOR CH 1/10W 20K	1	
R3082		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3085		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3086		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R3087		ERJ6GMZOROO	M.RESISTOR CH 1/10W 0	1	
R3088		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R3089		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3090		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3091		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R3092		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R4001,02		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	2	
R4003		ERDS2TJ680	C.RESISTOR 1/4W 68	1	
R4004,05		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R4006		ERDS2TJ680	C.RESISTOR 1/4W 68	1	
R4007		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4009		ERDS2TJ221	C.RESISTOR 1/4W 220	1	
R4010		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4011,12		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	2	
R4013		ERG2SJ681	M.RESISTOR 2W 680	1	
R4014		ERG1SJ122	M.RESISTOR 1W 1.2K	1	
R4015		ERJ6GMYG100	M.RESISTOR CH 1/10W 10	1	
R4016,17		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	2	
R4018		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R4019,20		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R4021		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R4022		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4023		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4024		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R4025		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4026		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R4027		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4038		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4039		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4040		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4041,42		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R4047		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4048		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R4049		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R4050		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4051		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4052		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4053		ERG1SJ680	M.RESISTOR 1W 68	1	
R4054		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4501,02		ERJ3GEYOROO	M.RESISTOR CH 1/16W 0	2	
R4503		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R4504,05		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R4506,07		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4508		ERJ3GEYG224	M.RESISTOR CH 1/16W 220K	1	
R4509		ERJ3GEYJ622	M.RESISTOR CH 1/16W 6.2K	1	
R4511		ERJ3GEYG273	M.RESISTOR CH 1/16W 27K	1	
R4512		VRE0071E163	M.RESISTOR CH 1/10W 16K	1	
R4513		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R4514,15		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R4518,19		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R4522		ERJ3GEYJ225	M.RESISTOR CH 1/16W 2.2M	1	
R4527		VRE0071E333	M.RESISTOR 33K	1	
R4528		VRE0071E153	M.RESISTOR 15K	1	
R4529		ERJ3GEYG562	M.RESISTOR CH 1/16W 5.6K	1	
R4530		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4534		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4535		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4539		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4541		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4542		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4543		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4551,52		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R4553,54		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R4558		ERJ3GEYG224	M.RESISTOR CH 1/16W 220K	1	
R4561		ERJ3GEYG273	M.RESISTOR CH 1/16W 27K	1	
R4562		VRE0034E10C	M.RESISTOR CH 1/10W	1	
R4563		ERJ3GEYG272	M.RESISTOR CH 1/16W 2.7K	1	
R4568,69		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R4573		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4577		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4578		VRE0071E473	M.RESISTOR CH 1/10W 47K	1	
R4581		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4583		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4584		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4585		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4586		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4587,88		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R4591		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4592		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R4593		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4594		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4596		ERJ3GEYG473	M.RESISTOR CH 1/16W 47K	1	
R4597		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4598,99		ERJ3GEYG104	M.RESISTOR CH 1/16W 100K	2	
R4603		ERJ3GEYG183	M.RESISTOR CH 1/16W 18K	1	
R4606		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4610		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4611		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4612		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R4613		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R4615		ERJ3GEYJ133	M.RESISTOR CH 1/16W 13K	1	
R4616		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R4638		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4649		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R4651		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4652		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4653		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R4654		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4655		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4656		ERJ3GEYG243	M.RESISTOR CH 1/16W 24K	1	
R4657		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R4666		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R4671		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R6001		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6003		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6006		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6007		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6008		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6009		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6012		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6013,14		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6015,16		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6018		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6019,20		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6021		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6022		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6024-26		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	
R6027,28		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6029,30		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6033		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6034		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R6035,36		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6037,38		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6040,41		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R6043		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R6044		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6046,47		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R6048		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R6049		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R6050		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R6051,52		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	2	
R6053		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R6054		ERJ6GMYG201	M.RESISTOR CH 1/10W 200	1	
R6055		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R6056,57		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6058		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R6059		ERX1SJ1R8	M.RESISTOR 1W 1.8	1	
R6060		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R6061		ERJ6GMYG913	M.RESISTOR CH 1/10W 91K	1	
R6062		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R6063		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6064		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R6065,66		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R6067		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6068		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R6069		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6070		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R6071		ERJ6GMYJ243	M.RESISTOR CH 1/10W 24K	1	
R6072		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6074		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6701		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6702		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6703-05		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	3	
R6706,07		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R6708		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R6709		ERJ6GMYJ511	M.RESISTOR CH 1/10W 510	1	
R6710		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R6711		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6712		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6713		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R6715		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6716		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R6718		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6723		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R6724-26		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	3	
R6727		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6728		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6729		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6730		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R6731		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R6732,33		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	2	
R6734		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6735,36		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6737		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6738		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6739		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R6740-47		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	8	
R6748		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R6749		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R6750		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R6751		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R7302		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	
R7303		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R7304		ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R7305		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R7307		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R7311		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R7313		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R7320		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7323		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	
R7324,25		ERJ3GEYG471	M.RESISTOR CH 1/16W 470	2	
R7326		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	
R7327		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7328		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R7329		ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R7330		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R7331		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	
R7336		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R7337		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R7345		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R7352,53		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R7354,55		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R7358,59		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R7362,63		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R7602,03		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R7605-07		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	
R7609		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7611		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7612,13		ERG2SJ331	M.RESISTOR 2W 330	2	
R7614		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R7615		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7616,17		ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	2	
R7618		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7619		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
RX6701		EXBF9E103J	COMBI.R-R 10K	1	
S6001		VES0709	S-TAB SWITCH	1	
S6002		VST0176	S-VHS CASSETTE SW	1	
T0703		EQV5EC071A	TRANSFORMER	1	
T0704		EQV5EC072A	TRANSFORMER	1	
T4001		EIQ7QF013Q	TRANSFORMER	1	
T4002		EIQ7QF012Q	TRANSFORMER	1	
T7301		EQR7QG028P	TRANSFORMER	1	
T7304		EIS5EC017A	TRANSFORMER	1	
T7305		EQS5EC033A	TRANSFORMER	1	
VR301		EVMEGSA00B23	V.RESISTOR 2K	1	
VR302		EVMEGSA00B13	V.RESISTOR 1K	1	
VR303		EVMEASA00B13	V.RESISTOR 1K	1	
VR304		EVMEGSA00B13	V.RESISTOR 1K	1	
VR305,06		EVNDCAA03B23	V.RESISTOR 2K	2	
VR0701		EVNCBAA00B24	V.RESISTOR 20K	1	
VR803		EVMEASA00B14	V.RESISTOR 10K	1	
VR804		EVMEGSA00B53	V.RESISTOR 5K	1	
VR805		EVNDCAA03B23	V.RESISTOR 2K	1	
VR2001		EVNCYAA03B54	V.RESISTOR 50K	1	
VR3001-04		EVMF6SA00B14	V.RESISTOR 10K	4	
VR3005		EVMF6SA00B24	V.RESISTOR 20K	1	
VR3014		EVNCYAA03B54	V.RESISTOR 50K	1	
VR4001		EVNCYAA03B15	V.RESISTOR 100K	1	
VR4501		EVMECSA00B53	V.RESISTOR 5K	1	
VR4502		EVMEASA00BY4	V.RESISTOR	1	
VR4507		EVMEASA00BY4	V.RESISTOR	1	
VR4509		EVMECSA00BY3	V.RESISTOR	1	
VR4512		EVNCBAA00B52	V.RESISTOR 500	1	
VR4550		EVMECSA00B14	V.RESISTOR 10K	1	
VR4551,52		EVMEASA00B55	V.RESISTOR 500K	2	
VR7301,02		EVNCBAA00B53	V.RESISTOR 10K	2	
X0701		VLF1178	FILTER	1	
X0703		EFCT5R5MW5	CRYSTAL OSCILLATOR	1	
X0704		VLF1035	FILTER	1	
X801		VSX0406	CRYSTAL OSCILLATOR	1	
X6001		VSX0583	CRYSTAL OSCILLATOR	1	
X6701		VSX0583	CRYSTAL OSCILLATOR	1	
X6702		VSX0353	CRYSTAL OSCILLATOR	1	
X7301		EFCT5R5MS5	CRYSTAL OSCILLATOR	1	
X7304		EFCT5R74MS5B	CRYSTAL OSCILLATOR	1	
X7305		VSX0648	CRYSTAL OSCILLATOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
		VMD2328	REEL GUIDE	1	
		VMP4894	SUPPORT ANGLE	1	FOR DECODER C.B.A.
		VMP4471	TV DEMODULATOR ANGLE	1	FOR TV DEMODU. C.B.A
		VMT0199	SPACER	1	FOR TV DEMODU. C.B.A
		VMD2329	PHOTO TR. HOLDER	2	FOR Q6002,Q6003
		VMD2330	SENSOR LED HOLDER	1	FOR D6005
	■	VEP03B75A	INPUT/OUTPUT PACK C.B.A.		(RTL)
C3901		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3902		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C3904		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3905		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3917		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3918		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3919		ECEA1AKA470	E.CAPACITOR 10V 47U	1	
C3920		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3921		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3932,33		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C4901,02		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C4903		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C4904		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C4905		ECEA0JKA331	E.CAPACITOR 6.3V 330U	1	
C4906		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C4907-14		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	8	
D3901		MA4056M	DIODE	1	
D3902		MA4130L	DIODE	1	
D3903		1SS254	DIODE	1	
D3904		MA151K	DIODE	1	
D3905		1SS254	DIODE	1	
D3906		MA151K	DIODE	1	
D3907		MA151WK	DIODE	1	
D3908		MA151WA	DIODE	1	
D4901		MA4056M	DIODE	1	
IC3901		MC14051BF	IC	1	
IC3906		BU12101-06	IC	1	
IC3907		AN1393S	IC	1	
IC3908		MC14052BF	IC	1	
IC3909		MC14053BF	IC	1	
IC4901,02		MC14052BF	IC	2	
IC4903,04		NJM4558M	IC	2	
JK1		VEJ1541	I/O JACK PANEL	1	
JK3901,02		VJS1470	21PIN SKIRT JACK	2	
K3901		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K3904		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
L3905		VLQ0599J680	COIL 68UH	1	
L4907		VLQ0599J680	COIL 68UH	1	
P3901		VJP1243T	CONNECTOR (MALE) 3P	1	
P3902		VJP3234B010	CONNECTOR (MALE) 10P	1	
PS3901,02		VJS3043F011W	CONNECTOR (FEMALE) 11P	2	
PS3903		VJS3043B010W	CONNECTOR (FEMALE) 10P	1	
PS3904		VJS3043B012W	CONNECTOR (FEMALE) 12P	1	
Q3904		2SD1996	TRANSISTOR	1	
Q3905		MSD601	TRANSISTOR	1	
Q3908		XN1501	TRANSISTOR-TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q3909		MSB709	TRANSISTOR	1	
Q3910		MSD601	TRANSISTOR	1	
Q3911		MSB709	TRANSISTOR	1	
Q3912		MSD601	TRANSISTOR	1	
Q3914		MSD602	TRANSISTOR	1	
Q3915		XN4402	TRANSISTOR	1	
QR3901		MUN2111	TRANSISTOR-RESISTOR	1	
QR3902		MUN2213	TRANSISTOR-RESISTOR	1	
QR3903		XN1213	TRANSISTOR-TRANSISTOR	1	
QR3904		MUN2213	TRANSISTOR-RESISTOR	1	
QR3906		XN1211	TRANSISTOR-TRANSISTOR	1	
QR3907		MUN2213	TRANSISTOR-RESISTOR	1	
QR3908		UN2216	TRANSISTOR-RESISTOR	1	
R3911		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3912,13		ERDS2TJ472	C.RESISTOR 1/4W 4.7K	2	
R3914		ERDS2TJ223	C.RESISTOR 1/4W 22K	1	
R3915-19		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	5	
R3920		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R3921		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3922		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3923		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3924		ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R3925		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R3926		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3928,29		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R3930		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3931		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R3932		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3933		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3934		ERJ6GMYJ111	M.RESISTOR CH 1/10W 110	1	
R3935		ERJ6GMYJ121	M.RESISTOR CH 1/10W 120	1	
R3936		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3937		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3938		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R3939		ERJ6GMYJ121	M.RESISTOR CH 1/10W 120	1	
R3940		ERJ6GMYJ111	M.RESISTOR CH 1/10W 110	1	
R3941		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3942		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3943		ERDS2TJ332	C.RESISTOR 1/4W 3.3K	1	
R3944		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3945		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R3946		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3947		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3948		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3949		ERDS2TJ681	C.RESISTOR 1/4W 680	1	
R3950,51		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	2	
R3952		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R3953-55		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	3	
R3958,59		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R3960		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3961		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R3962		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R4901,02		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	2	
R4903		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4904-07		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	4	
R4908		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R4909		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4911		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4912		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R4914		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4915-18		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	4	
R4919		ERJ6GMYJ474	M.RESISTOR CH 1/10W 470K	1	
R4920		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R4921		ERJ6GMYJ474	M.RESISTOR CH 1/10W 470K	1	
R4922		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R4923		ERJ6GMYJ474	M.RESISTOR CH 1/10W 470K	1	
R4924		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R4925		ERJ6GMYJ474	M.RESISTOR CH 1/10W 470K	1	
R4926		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R4927,28		ERJ6GMYJ474	M.RESISTOR CH 1/10W 470K	2	
R4929-32		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	4	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
S3901		VSS0513	S-OUT SELE. SWITCH	1	
S3902		ESD172311	RF CONV SWITCH	1	
			MISCELLANEOUS		
		XTV3+8GFZ	SCREW	4	FOR 21PIN SKIRT JACK
	■	VEP05176G	HEAD AMP C.B.A.		(RTL)
C503		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C505-08		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	4	
C509		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C510,11		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C512		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C513		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C514		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C515,16		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C517,18		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C519,20		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C521		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C523		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C524,25		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C526		VCEA0JAC221	E.CAPACITOR 6.3V 220U	1	
C527		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C531		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C532		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C533,34		ECUM1H121JCN	C.CAPACITOR CH 50V 120P	2	
C535		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C536		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C537		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C538,39		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C540		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C551		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C552-54		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C555		ECEA0JPK221	E.CAPACTIOR 6.3V 220U	1	
C556,57		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C559		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C560,61		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C562,63		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C564		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C565		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C566		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C567		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C569		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
IC501		AN3336SB	IC	1	
IC502		AN3370K	IC	1	
IC551		BA7743FS	IC	1	
K501		VLP0145	COIL	1	
K502		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K503,04		VLP0145	COIL	2	
K505		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
K506		VLP0145	COIL	1	
K552		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
L501-03		VLQ0540K330	COIL 33UH	3	
L504		VLQ0540J5R6	COIL 5.6UH	1	
L551,52		VLQ0540K330	COIL 33UH	2	
P501		VJS3537B020G	CONNECTOR (FEMALE) 20P	1	
P502		VJS2603	CONNECTOR (FEMALE)	1	
Q501		MSB709	TRANSISTOR	1	
Q502		MSD601	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
QR501		MRN2404TE85L	TRANSISTOR-RESISTOR	1	
R501		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R502		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R503		ERJ6GMYG752	M.RESISTOR CH 1/10W 7.5K	1	
R504		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R505		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R506		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R507		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R508		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R509-12		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	4	
R513		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R514		ERJ6GMYJ274	M.RESISTOR CH 1/10W 270K	1	
R517		ERJ6GMYJ100	M.RESISTOR CH 1/10W 10	1	
R518,19		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	2	
R520		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R521,22		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	2	
R523		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R524		VRE0034E182	M.RESISTOR CH 1/10W 1.8K	1	
R525		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R526		ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R551		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R552		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R553		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R554		ERJ6GMYJ243	M.RESISTOR CH 1/10W 24K	1	
R556		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R557		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R558		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R559,60		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R561		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R562		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R563		VRE0034E100	M.RESISTOR CH 1/10W 10	1	
R564		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R565		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R566		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R567		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R568		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R569		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R570		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
			MISCELLANEOUS		
		VSC3714	SHIELD COVER (TOP)	1	
		VSC3478	SHIELD COVER (MAIN)	1	
		VSC3715	SHIELD COVER (BOTTOM)	1	
	■	VEP06A17A	VR C.B.A.		(RTL)
C6501,02		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C6503,04		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C6505		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6506		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C6507		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6508		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6509		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C6512		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C6513		ECEA1EKS3R3I	E.CAPACITOR 25V 3.3U	1	
C6514		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C6515		ECEA1AKA330	E.CAPACITOR 10V 33U	1	
D6504		HLMK-D300	DIODE	1	
D6505		HLMK-D200	DIODE	1	
D6506-08		1SS254	DIODE	3	
D6511		HLMK-D500	DIODE	1	
IC6501		VCR0172	IC	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
J4801		VJJ0329	HEADPHONE JACK	1	
J4802		VJJ0308	MIC JACK	1	
J4803		VJJ0242	SYNCRO JACK	1	
J6501		VEJ1341	LINE INPUT JACK	1	
L6501,02		ELESE101KA	COIL 100UH	2	
L6503,04		ELESE221KA	COIL 220UH	2	
L6505,06		ELESE471KA	COIL 470UH	2	
LB4801		VLP0145	COIL	1	
P6501		VJP3405A013W	CONNECTOR (MALE) 13P	1	
P6502		VJP3234B010	CONNECTOR (MALE) 10P	1	
P6503		VJP1930T	CONNECTOR (MALE) 15P	1	
PP6001,02		VJP3042A005W	CONNECTOR (MALE) 5P	2	
PS4801,02		VJS3042B005W	CONNECTOR (FEMALE) 5P	2	
QR6501		UN221F	TRANSISTOR-RESISTOR	1	
QR6502		UN211F	TRANSISTOR-RESISTOR	1	
QR6503		UN221F	TRANSISTOR-RESISTOR	1	
QR6504		MUN2211	TRANSISTOR-RESISTOR	1	
QR6505		UN2119	TRANSISTOR-RESISTOR	1	
R6504		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R6505		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R6507		ERJ6GMYG271	M.RESISTOR CH 1/10W 270	1	
R6509		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R6510,11		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	2	
R6513		ERJ6GMYG271	M.RESISTOR CH 1/10W 270	1	
R6514		ERJ6GMYG331	M.RESISTOR CH 1/10W 330	1	
R6515		ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R6516		ERJ6GMYG331	M.RESISTOR CH 1/10W 330	1	
R6517		ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
S6501,02		EVQ11409K	SWITCH	2	
S6503		VSS0405	WIDE SWITCH	1	
S6506		VSS0404	S-VHS SWITCH	1	
VR6501		EVUF3AF15B24	PIC STL VR	1	
VR6502		EVJYM0F15C23	HEAD PHONE LEVEL VR	1	
VR6503,04		EVJ021F1554J	REC LEVEL (L)(R) VR	2	
ZB4801		VJF1076	JACK HOLDER	1	
			MISCELLANEOUS		
		VGU5986	SLIDE KNOB	2	
		VGU6968	VR KNOB	4	
		VMD0504	LED HOLDER	3	
	■	VEP07808A	TIMER C.B.A.		(RTL)
C7501		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C7504		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7505		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C7506		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C7507		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C7508		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7509		ECEA1HKS100	E.CAPACITOR 50V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C7510		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7511		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C7513		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C7514		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C7515		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7516		ECEA1AKS221	E.CAPACITOR 10V 220U	1	
C7517,18		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7519,20		ECEA1EKS4R7I	E.CAPACITOR 25V 4.7U	2	
C7521		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C7522		ECEA0JKS220	E.CAPACITOR 6.3V 22U	1	
C7524		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7525		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7526,27		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7528,29		ECUM1H473ZFN	C.CAPACITOR CH 50V 0.047U	2	
D7501		MA151K	DIODE	1	
D7502-06		1SS254	DIODE	5	
D7507		MA151K	DIODE	1	
D7510-12		MA151K	DIODE	3	
D7514		MA151K	DIODE	1	
D7516-19		MA151K	DIODE	4	
D7528		MA151K	DIODE	1	
D7529		MA723VT	DIODE	1	
D7530		MA151K	DIODE	1	
D7531		1SS254	DIODE	1	
D7532		MA4220	DIODE	1	
D7542		MA151K	DIODE	1	
D7544		MA151K	DIODE	1	
D7546		1SS254	DIODE	1	
DP7501		VSL0336	DISPLAY TUBE	1	
IC7501		M37507V6AD	IC	1	
IC7503		RPM-675CBRL	IC	1	
IC7504		PST7023	IC	1	
IC7505		S80743AL-Z	IC	1	
IC7506		BA6810F	IC	1	
K7504		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
P7501		VJS3537A032G	CONNECTOR (FEMALE) 32P	1	
P7504		VJS3405A013A	CONNECTOR (FEMALE) 13P	1	
PP7501		VJS3301	CONNECTOR (FEMALE)	1	
QR7501		MUN2112	TRANSISTOR-RESISTOR	1	
QR7505-08		MUN2113	TRANSISTOR-RESISTOR	4	
QR7509-11		MUN2111	TRANSISTOR-RESISTOR	3	
QR7512,13		MUN2112	TRANSISTOR-RESISTOR	2	
R7501-04		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	4	
R7505,06		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7508-10		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	3	
R7512		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7513		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7514		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7515		ERDS2TJ470	C.RESISTOR 1/4W 47	1	
R7516		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7517		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7518		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7519		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7520,21		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R7522		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R7523		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R7524		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R7525		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R7527		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7528		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7529,30		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R7532		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7534,35		ERJ6GMYJ132	M.RESISTOR CH 1/10W 1.3K	2	
R7536		ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R7537,38		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
RX7501,02		EXBF6E104J	RESISTOR-RESISTOR	2	
RX7503		EXBF8E104J	COMBI.R-R 100K	1	
S7501-11		EVQ11409K	SWITCH	11	
S7512		VSQ0822	ROTARY SWITCH	1	
VC7501		ECRHA010A54R	V.CAPACITOR	1	
VR4004		EVNDXAA00B53	V.RESISTOR 5K	1	
X7501		VSX0608	CRYSTAL OSCILLATOR	1	
X7502		VSX0094	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VJF1139	FIP HOLDER	1	
		VMD2247	INFLA HOLDER	1	
		VMD2035	JOG SHUTTLE HOLDER	1	
	■	VEP01639A	POWER C.B.A.		(RTL) <!>
C1101-03		ECKMWS102MEH	C.CAPACITOR	3	<!>
C1105,06		ECQU2A154MV	P.CAPACITOR 250V 0.15U	2	<!>
C1107		ECEC2GG121HZ	.CAPACITOR V	1	
C1108		ECCD3A121KGE	C.CAPACITOR 1kV 120P	1	
C1109		ECKD2H103PU	C.CAPACITOR 500V 0.01U	1	
C1110		ECA0GXLV331	E.CAPACITOR 4V 330U	1	
C1111		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C1112		ECQB1H822JF	P.CAPACITOR 50V 8200P	1	
C1113		ECQE6104KF	P.CAPACITOR 630V 0.1U	1	
C1114		ECA1VXLV470	E.CAPACITOR 35V 47U	1	
C1121		EEUFA1E272	E.CAPACITOR 25V	1	
C1122		EEUFA1E102	E.CAPACITOR 25V	1	<!>
C1123		ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1124		EEUFA1A332	E.CAPACITOR 10V	1	
C1125		EEUFA1A102	E.CAPACITOR 10V	1	
C1126		ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1127		EEUFA1H820B	E.CAPACITOR 50V	1	
C1128		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C1129		ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1130		EEUFA1V151B	E.CAPACITOR 35V	1	
C1131		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C1132		ECKD2H101KB	C.CAPACITOR 500V 100P	1	
C1133		EEUFA0J561	E.CAPACITOR 6.3V 560P	1	
C1134,35		ECQB1H103JF	P.CAPACITOR 50V 0.01U	2	
D1102		S1WBA60S	DIODE	1	<!>
D1103		AP01C	DIODE	1	
D1104		MA178	DIODE	1	
D1105		MA700	DIODE	1	
D1106		MA4200H	DIODE	1	
D1107		1SS254	DIODE	1	
D1108,09		ERA15-08	DIODE	2	
D1110		RD100E	DIODE	1	
D1121		F5KF20B	DIODE	1	
D1122		F5KQ40	DIODE	1	
D1123		ERA22-02	DIODE	1	
D1124		MA185	DIODE	1	
D1125		11EQS04	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D1126		MA4047M	DIODE	1	
D1127		MA4043-L	DIODE	1	
IC1101		STRM6559LF	IC	1	
L1101,02		ELF18D221F	COIL 220UH	2	<!>
L1103,04		VLP0083	COIL	2	
L1105		VLP0085	COIL	1	
L1106		VLP0083	COIL	1	
L1121,22		VLQ0611K220	COIL 22UH	2	
L1123,24		ELESE101KA	COIL 100UH	2	
P1101		VJS3306	AC INLET	1	<!>
P1102		VJP3631A011W	CONNECTOR 11P	1	
Q1101		PC120FY	TRANSISTOR	1	<!>
QR1121		UN6213	TRANSISTOR-RESISTOR	1	
R1101		ERC12AGM334	S.RESISTOR 1/2W 330K	1	
R1102		ERG1SJ393	M.RESISTOR 1W 39K	1	
R1105		ERDS1TJ395	C.RESISTOR 1/2W 3.9M	1	
R1106		ERDS1TJ475	C.RESISTOR 1/2W 4.7M	1	
R1107		ERDS2FJ224	C.RESISTOR 1/4W 220K	1	
R1108		ERDS2FJ101	C.RESISTOR 1/4W 100	1	
R1109		ERDS2FJ152	C.RESISTOR 1/4W 1.5K	1	
R1110		ERDS2FJ103	C.RESISTOR 1/4W 10K	1	
R1111		ERDS2FJ561	C.RESISTOR 1/4W 560	1	
R1112		ERDS2FJ331	C.RESISTOR 1/4W 330	1	
R1113		ERX1SJR82	M.RESISTOR 1W 0.82	1	
R1114		ERDS2FJ222	C.RESISTOR 1/4W 2.2K	1	
R1115		ERDS2FJ100	C.RESISTOR 1/4W 10	1	
R1121		ERDS2TJ220	C.RESISTOR 1/4W 22	1	
R1122		ERDS2TJ221	C.RESISTOR 1/4W 220	1	
T1101		ETE28K100BY	TRANSFORMER	1	<!>
			MISCELLANEOUS		
		EYF52BC	FUSE HOLDER	2	<!>
		VSC4205	SHIELD CASE	1	
		VSC3434	SHIELD CASE	2	
		VSC4259	SHIELD CASE	1	
		XTN3+8G	SCREW	2	
		XTN3+10G	SCREW	1	
		VMZ2212	CAPACITOR COVER	2	<!>
	■	VEX0231	CYLINDER DRIVE C.B.A.		(RTL)
C2901-03		ECEA1VSN2R2	E.CAPACITOR 35V 2.2U	3	(RTL)
C2904-06		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	3	
C2907		ECUM1E683KBM	C.CAPACITOR CH 25V 0.068U	1	
C2908		ECUM1E473KBM	C.CAPACITOR CH 25V 0.047U	1	
C2910		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
IC2901		AN3814K	IC	1	
P2901		VJP2603W	CONNECTOR (MALE) 12P	1	
P2902		VJP1232T	CONNECTOR (MALE) 5P	1	
R2901		ERX12SJR68	M.RESISTOR CH 1/2W 0.68	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
TH2901		VRH0017-1A	THERMISTOR	1	
			MISCELLANEOUS		
		VMA9138	MAIN HOLDER	1	
	■	----------	MOTOR C.B.A.		
			MISCELLANEOUS		
		VJP3316B002	CONNECTOR (FEMALE) 2P	1	

INTERNAL REFERENCE CODE

NOTE : This chart is only for internal reference.
Do not order any parts according to these codes.

P. C. B.	FILM CODE
MAIN	HOAI00－03B73
LUMINANCE & CHROMINANCE	HOAI00－03B74
HEAD AMP	HOAI04－05176
TIMER SYUUGOU (FRONT JACK / VR / TIMER)	HOAI00－0325A
HI FI	HOAI00－04447
INPUT／OUTPUT	HOAI00－03B75
DECORDER	HOAI00－07784
TV DEMODULATOR	HOAI00－07801
CYLINDER DRIVE	HOAI00－00X69
POWER	HOAI00－01639

Panasonic
MATSUSHITA ELECTRIC

Printed in Japan

ORDER NO. VRD9307M131

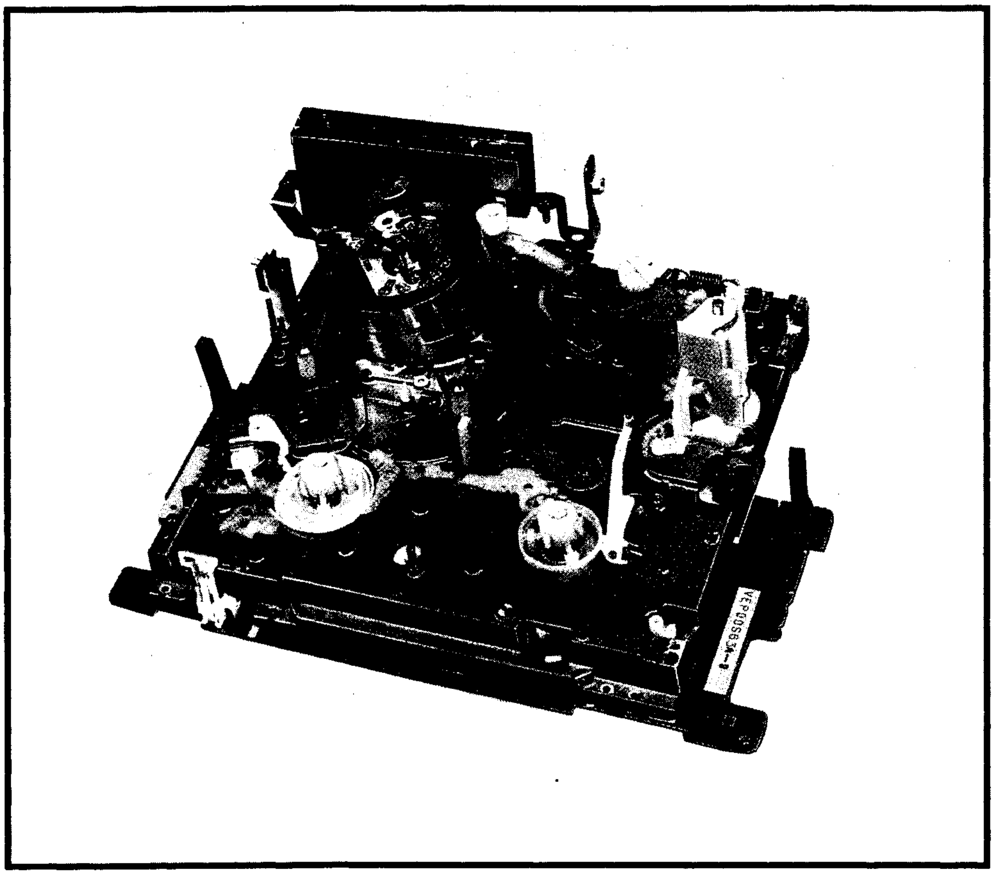
Service Manual

Service Information
Adjustment Procedures
Assembly / Disassembly Procedures
Parts Change (~May '93)
Trouble Shooting

V10220

VHS Video Cassette Recorder
Mechanical chassis

No. K



IMPORTANT
The K-Mechanism chassis are built in several Panasonic VHS Video Cassette Recorders From NV-SD, HD series in 1992.
Thus, properly file this service manual with the service manuals of the relative video cassette recorders.

Panasonic

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1. SERVICE INFORMAION

1-1. SERVICE POSITION

When servicing the K–Mechanism, the Mechanism can easily be fixed by standing the Mechanism up in the Main Frame as shown below to check easily.

In this position, the following services are possible.

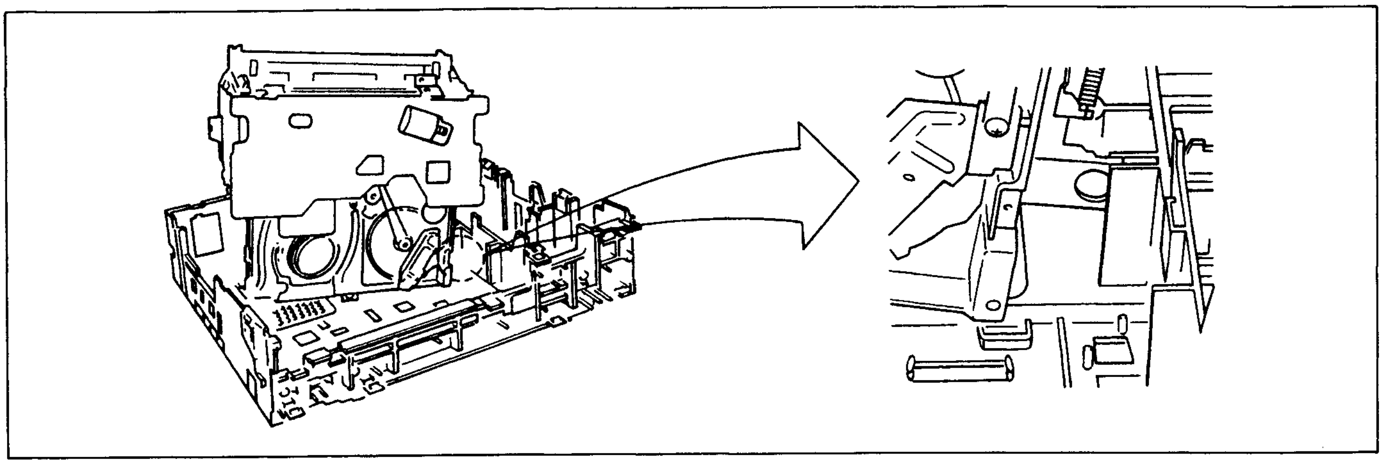


Fig. S1

1–1–1. CHECKING OF GEAR PHASE ALIGNMENT CONDITION

1) Remove the Mechanism Connection C.B.A.
2) Check gear phase Alignment Condition of Mechanism described on the left (NV–SD series) or bottom (NV–HD series) side of Frame.)

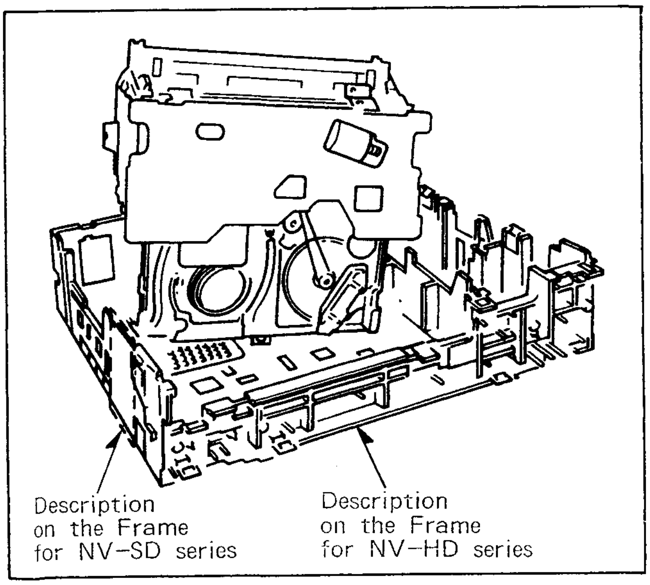

Description on the Frame for NV–SD series
Description on the Frame for NV–HD series

Fig. S2

1–1–2. Checking of Loading / Unloading Operation.

There are 3 methods for manual operation of loading/unloading operation as follows.

1. HAND OPERATION
   1) Remove the Mechanism Connection C.B.A.
   2) Turn the Worm Gear or the WORM WHEEL GEAR (Remove the loading Motor Unit) manually.

2. BATTERY OPERATION
   1) Remove the Mechanism Connection C.B.A.
   2) Connect the Battery (Manganes-Type R6 (AA) 3pcs./+4.5V) or Power Supply (+4.5V) to the Loading Motor terminals.

3. SERVICE INFORMATION DISPLAY OPERATION
   1) Set the Service Information Display mode. (Turn the Shuttle Ring to FF then push the Eject button, or press the FF, REW and Eject buttons simultaneously.)
   2) Make a momentary short circuit as shown in the service manual, or press the TV/VTR button. (The end of display on the Display becomes "––".)

Note:

For NV–HD100AM/MC, NV–F125BD, NV–SD20EE, and NV–SD25AM, make a momentary short circuit between TL7508 and D7517–cathoid For NV–HD100AM/MC and NV–F12513D, or TL7508 and D7527–cathoid for NV–SD20EE and NV–SD25AM.

3) In the above Service Information Display mode, The Loading Motor rotates for loading operation when the "PLAY" button is pressed The Loading Motor rotates for unloading operation when the "STOP" button is pressed.

Remark:

After checking, check the "SERVICE" INFORMATION DISPLAY" mode for final confirmation of movement of Mechanism.

1–1–3. Checking of operation of Reel Gears.

1) Remove the Mechanism Connection C.B.A.
2) Set mechanism to "PLAY" position by manual operation of loading.
3) Turn the "Rotor Unit" to check movement of reel gears.

1–2. REPLACEMENT OF CYLINDER UNIT

The Cylinder Unit can be replaced easily by the following method.

1) Remove the Top Panel.
2) Remove the 3 screws of the Cylinder Unit with a magnetized screw driver through the holes on the Bottom Plate as shown in Fig.S4.

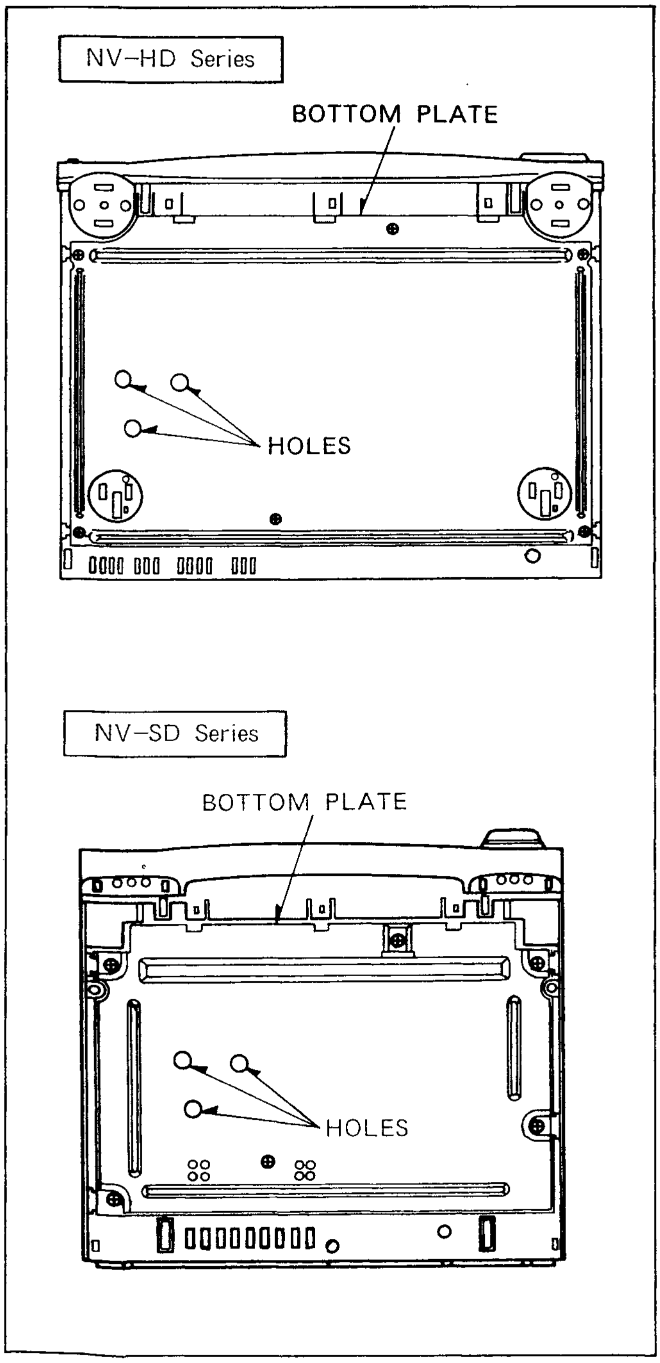

NV–HD Series
BOTTOM PLATE
HOLES
NV–SD Series
BOTTOM PLATE
HOLES

Fig. S4

1–3. ASSEMBLY OF CAPSTAN STATOR UNIT

When replacing the CAPSTAN STATOR UNIT, the CENTRE FIXING TOOL (VFK0851) must be used to fix the centre of CAPSTAN STATOR UNIT.

Method:
1) Place the CAPSTAN STATOR UNIT into position.
2) Loosely tighten the 3 screws.
3) Insert the CENTRE FIXING TOOL (VFK0851) as shown in Fig.S5.
4) Tighten the 3 screws.
5) Remove the CENTRE FIXING TOOL.

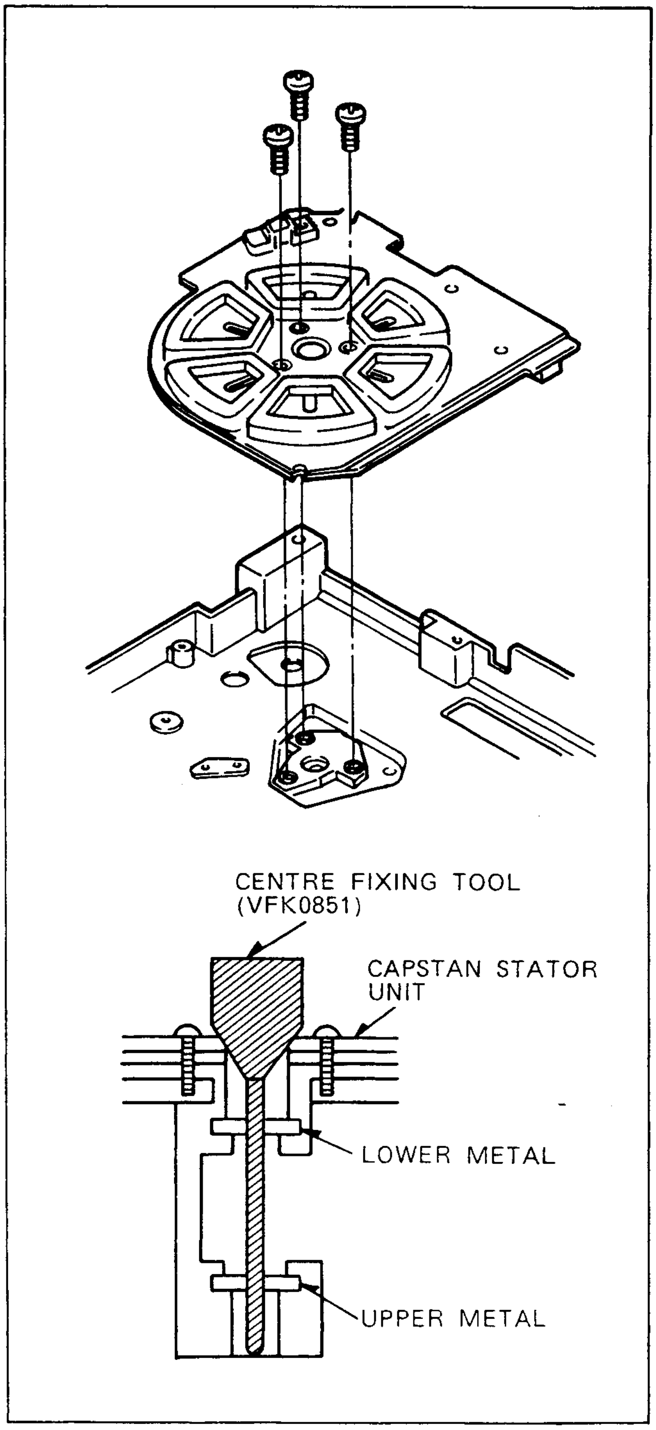

CENTRE FIXING TOOL
(VFK0851)
CAPSTAN STATOR UNIT
LOWER METAL
UPPER METAL

Fig. S5

1-4. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear and will not rotate.
For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

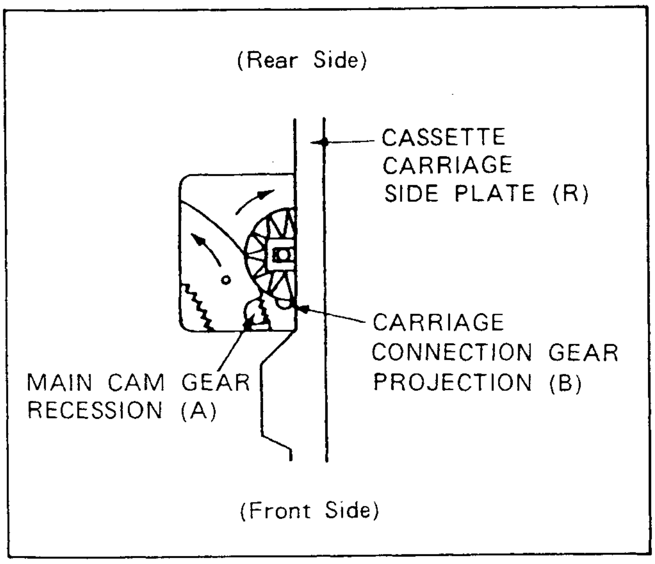

(Rear Side)
CASSETTE CARRIAGE SIDE PLATE (R)
CARRIAGE CONNECTION GEAR PROJECTION (B)
MAIN CAM GEAR RECESSION (A)
(Front Side)

Fig. S6 Top View of Eject Operation

1-5. TAKE-UP PHOTO SENSOR OPERATION

Note the following matters for Take-up Photo Sensor Operation.

1) While servicing of the K-Mechanism, the unit will not operate properly if a strong light (ex, Fluorescent light, Spot light) falls on the Take-up Photo Sensor.
   In this case, cover the Take-up Photo Sensor to prevent the light from falling on it.
2) While servicing of the K-Mechanism with "Power On" and without cassette tape inserted, the Unit does not operate properly.

1-6. SERVICING OF POWER TR C.B.A.

When removing the connector on the Power Tr. C.B.A., hold the P. C. Board by hand to prevent damage of the Power Tr.

1-7. REMOVAL OF THE CASSETTE TAPE

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to remove the cassette manually. There are 2 methods of removing the cassette.

1. HAND OPERATION

1) Remove the bottom plate.
2) Turn the WORM GEAR to "A" arrow mark direction manually as shown in Fig.S7, moving the LOADING POST to the unloaded position.
3) Turn the CAPSTAN clockwise to take up the tape.
4) Turn the WORM GEAR again to eject the **cassette.**

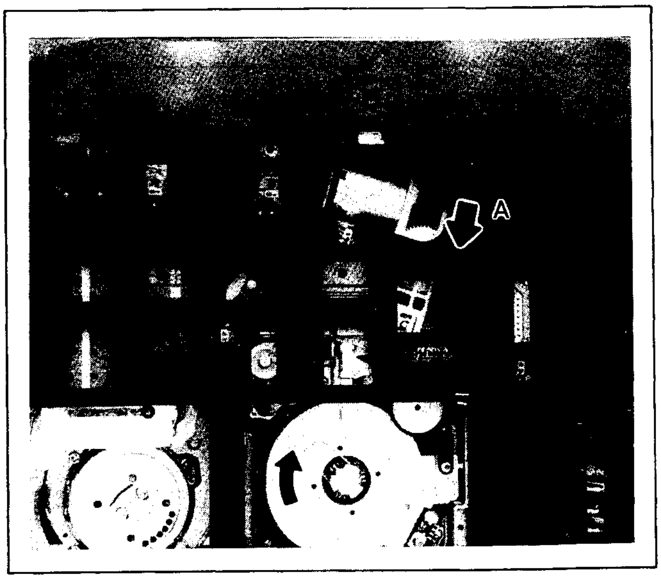


Fig. S7

2. BATTERY OPERATION

1) Connect the battery (Manganes-Type R6 (AA) 3pcs./+4.5V) to P1503 as shown in Fig. S8.
2) After moving the LOADING POST to the unloaded position, disconnect the battery to stop the motor.
3) Turn the CAPSTAN to clockwise to take up the tape.
4) Reconnect the battery to eject the cassette.

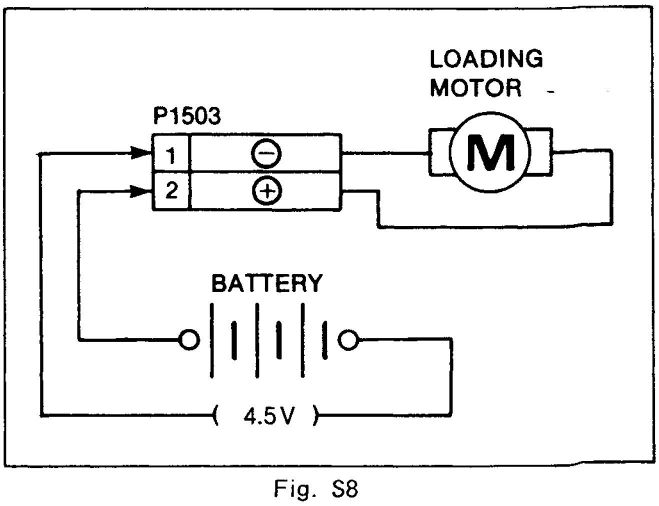


Fig. S8

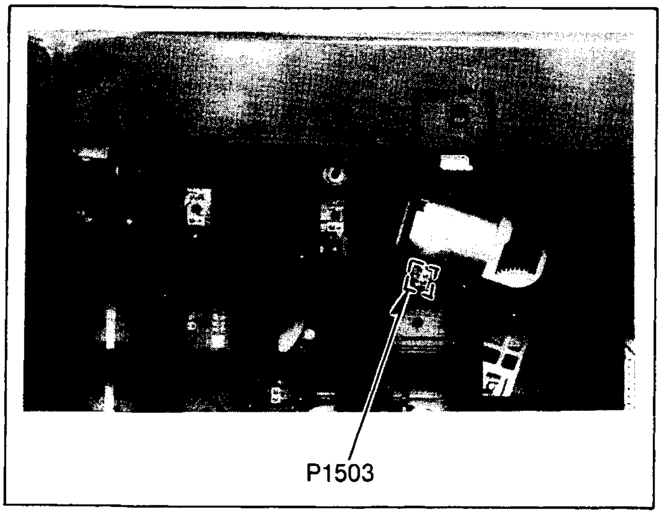


Fig. S9

1-8. INSTALLATION OF FLAT CARD CABLE

When installing of the Flat Card Cable to the connector, make sure the direction of the Flat Card Cable. The Insulation Sheet side is backside.

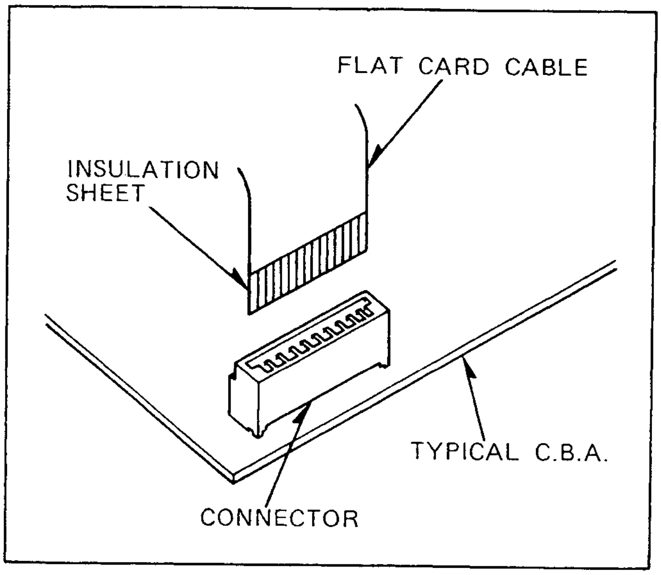

FLAT CARD CABLE
INSULATION SHEET
TYPICAL C.B.A.
CONNECTOR

Fig. S10

1-9. SERIAL CLOCK TRANSMISSION ERROR DISPLAY

If the Serial Clock is not transmitted from IC6001 to IC7501, "E9" is displayed as shown in Fig.T1. This indication will be displayed either during the Service Information Display mode or in normal mode.

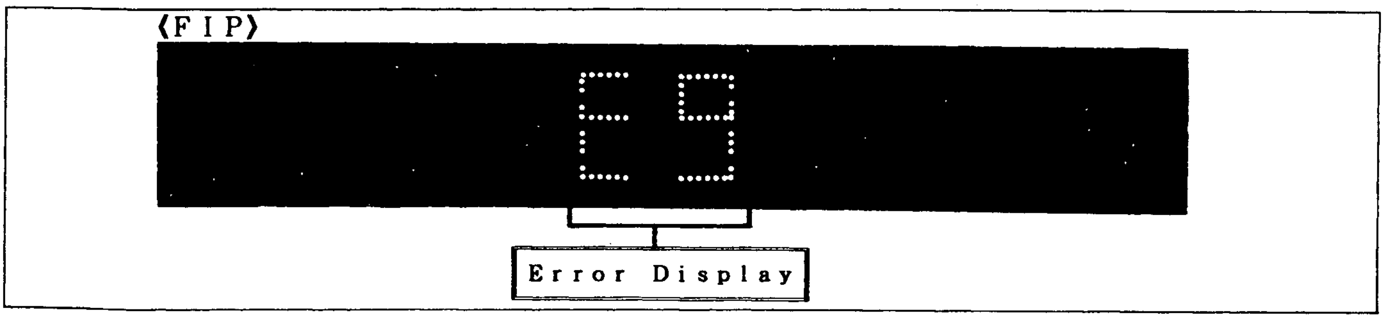

⟨F I P⟩
E9
Error Display

Fig. T1 Serial Data/Clock Transmission Error Display

1–10. SERVICE INFORMATION DISPLAY

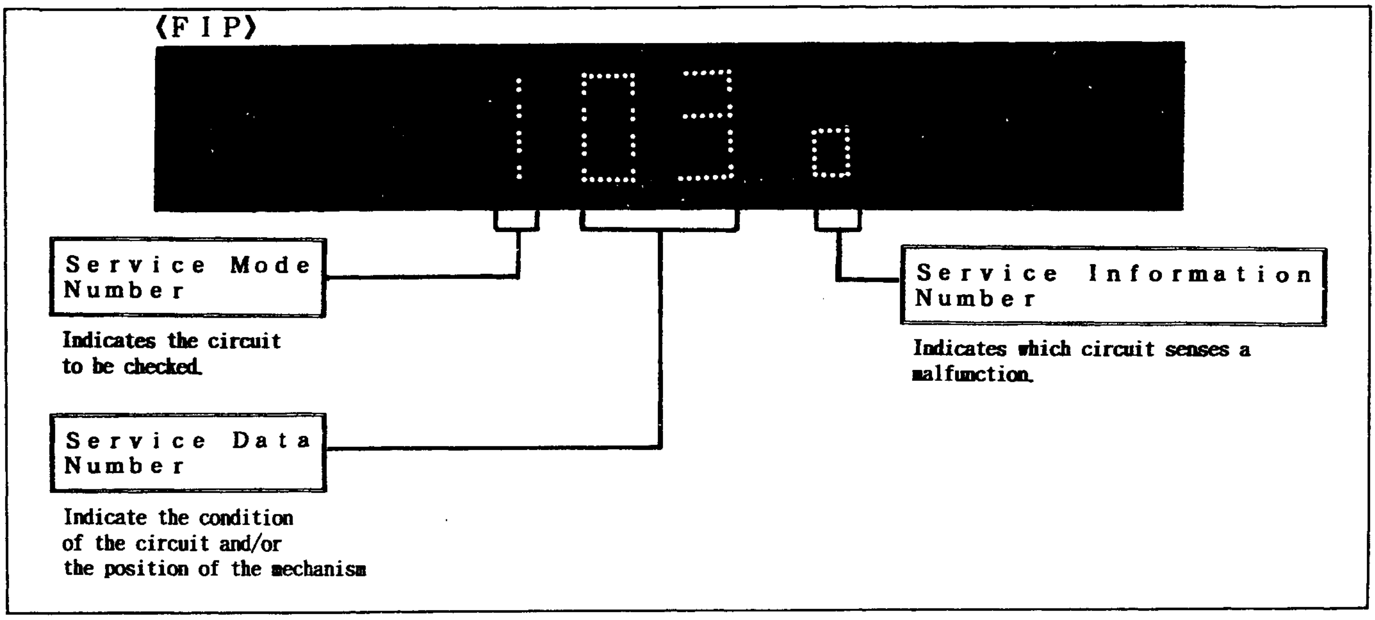

〈FIP〉
1 0 3 0
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism
Service Information Number
Indicates which circuit senses a malfunction.

Fig. D1 Service Information Display

1–10–1. Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

1–10–2. Turning on Service Information Display

There are two ways to turn on the Service Information Display.

(1) Turn the Shuttle Ring to FF then push the Eject button. The Service Information will be displayed for 1 minute.
(2) Connecting a jumper wire between TPSERV and TPGND For NV–SD series (TP6010 and TP6011 for NV–HD series) will display the service information indefinitely.

In the Service Information Display, there are four digits divided into 3 functions.
The first digit indicates which other 7 service modes that the unit is Currently in.

MODE 1 : Check tape protection circuit
MODE 2 : Check tape transport mechanism
MODE 3 : Check mode switching operation
MODE 4 : Check control buttons
MODE 5 : Check capstan motor
MODE 6 : Check cylinder motor
MODE 7 : Check loading/unloading operation

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The forth digit is the service Information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is supplied.

1−10−3. Use of Service Modes

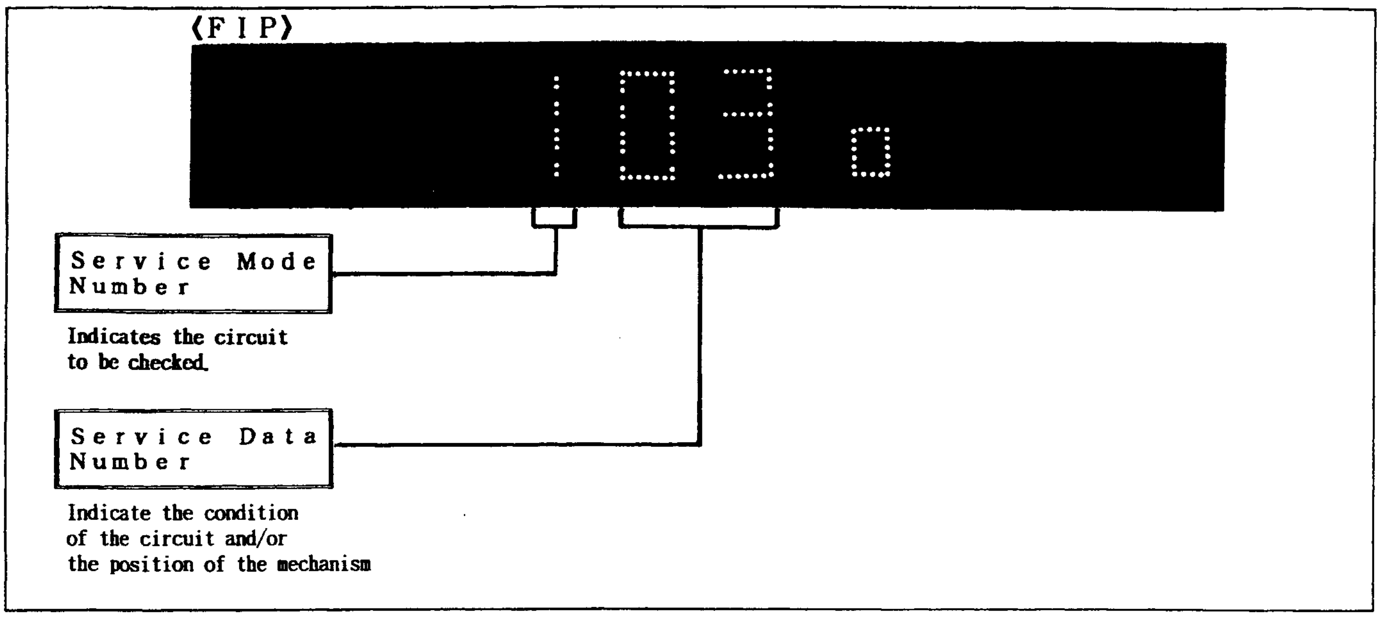
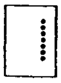

(F I P)
1 03 0
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism

Fig. D2. Service Mode Number and Service Data Number on S.I.D.

(1) Turn on Service Information Display.

(2) To change Service Modes turn the shuttle ring to FF then push the Eject button.

(3) Mode 1 : Checks that the Sensor LED, Supply & Take−up Sensor circuits check the circuits by blocking the light from the Sensor LED to either or both Supply & Take−up Sensors.

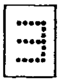


When the light is blocked to both sensors, "00" should be indicated on the service data number.
When the light is blocked to the supply sensor, "01" should be indicated.

(4) Mode 2 : Checks the mode switch circuit while indicating mechanism position.

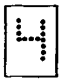
Service Data Numbers indicate the position of the mode switch and there by the mechanism position.

(5) Mode 3 : Checks that mode switch circuit operations have been completed.



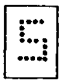
Service Data Number should indicate "00" after each mechanism operation is completed.

(6) Mode 4 : Checks the operation circuit.



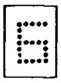
Indicates if IC6001 receives the operating commands from the mode buttons and/or remote controller.

(7) Mode 5 : Checks the capstan motor circuit.



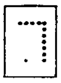
Indicates if the IC6001 has received the command to rotate the capstan motor.

(8) Mode 6 : Checks the cylinder motor circuit.



IC6001 has received the command to rotate the cylinder motor.

(9) Mode 7: Checks the Loading/Unloading Operation.



The Loading Motor rotates for loading operation when the "PLAY" button pressed.
The Loading Motor rotates For operation when the "STOP" button is pressed.
Note: This mode can be used by the System Control Microprocessor IC6001: MN67434VRSG or MN67434VRSH.

<NOTE>
Refer to Fig.D5 for details of Service Data Number.

1-10-4. Service Information Number

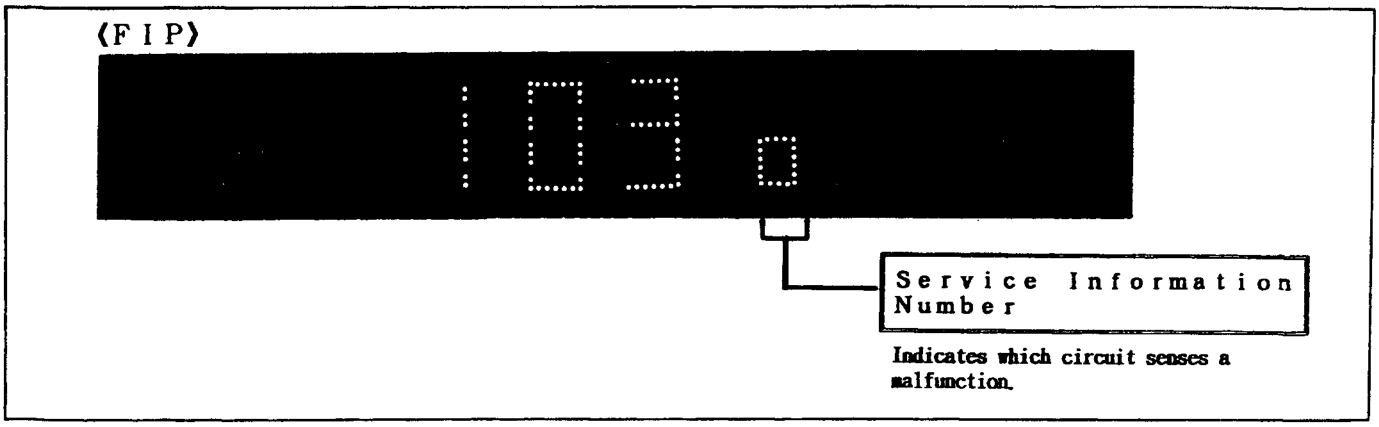

(F I P)
1 03
0
Service Information Number
Indicates which circuit senses a malfunction.

Fig. D3 Service Information Number on S.I.D.

Refer to Fig.D4 for details of Service Information Number.

Note:
The Service Information Number display is independent of the service mode display.
The Service Information Number will be stored as long as AC power is supplied.
If a second error occurs, the most current error will be displayed.

Service Information Number	Malfunction
0	Normal (No problem)
1	Cylinder stop
2	Tape reel stop
3	Stop at position other than 4 or 6
4	Stop during unloading
5	Falty capstan rotation
6	Stop during Cassette-In/Eject operation

Fig. D4 Service Information

Service mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	—	00	No light detected at either sensor	Tape not required
		01	Tape Begining. Light to Supply Photo Sensor is blocked.	
		02	**Tape End.** **Light to Take-up Photo Sensor is blocked.**	
		03	Light detected at both sensors.	
2	—	00	EJECT	Tape Reuired *1 : STOP3 ; The Pinch Roller is on the capstan motor shaft. *2 : STOP ; The Pinch Roller is off the capstan motor shaft. Refer to Fig. D7 to Check mechanism Position and timing.
		01	Cassette-down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY/REC, STILL/PAUSE, CUE, FWD SLOW, STOP3 *1	
		05	STOP*2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the mode switch circuit or system.	Tape Required.
4	Display only when the operating button is pressed.	Refer to Fig. D6		Tape not required.
5	Left digit only, disregard Right digit display.	81 Left Digit Right Digit	8, 9, u, A, -, n, L, and no display indicate that the Capstan motor "PLAY" command recived by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.
	Right digit only, disregard left digit display.	87 Left Digit Right Digit	1, 2, 3, 4, 5, 6, 7, indicate that the Capstan motor CUE, FF, Forward slow" commands received by IC6001.	
	Right digit only, disregard left digit display.	8 Left Digit Right Digit	8, 9, u, A, -, n, L, and no display indicate that the Capstan motor Reverse, Rew, Reverse Slow commands received by IC6001.	
6	Left digit only, disregard Right digit display.	10 Left Digit Right Digit	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.

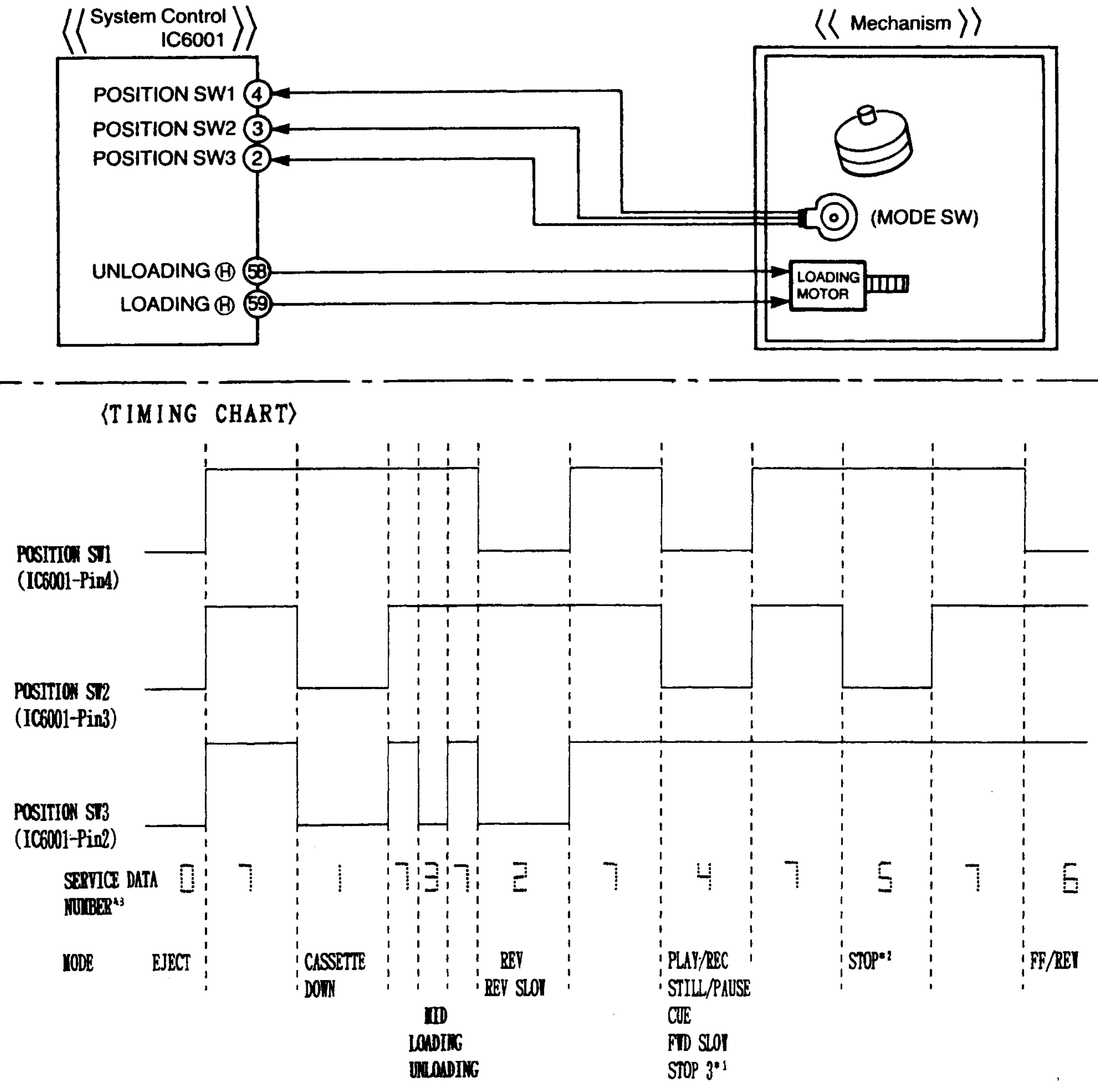
Fig. D5 Service Data Display and Indication

SERVICE DATA NUMBERS	MODE BUTTONS	SERVICE DATA NUMBERS	MODE BUTTONS
3n	OPERATE	54	RESET
01	EJECT	5	ZERO STOP
09	AUDIO DUB	-0	INPUT SELECT
A3	INSERT	49.4U	INDEX
-9	PAL/MESECAM	A1.A2	TRACKING(+,-)/V-LOCK
—	CHECK/PROG.	9	REPEAT
34 OR 35	∧∨, +−	8	SKIP
—	NEXT/SP/LP	—	TAPE SELECT
—	SLEEP/SHIFT	—	PROG.
A4	TIMER REC	—	NEXT
08	REC	—	RECORDING SP/LP
—	CLOCK SET	—	CANCEL
—	TUNER PRESET	10	SU(1)
80	PAUSE/STILL	11	MO(2)
0U	PLAY	12	TU(3)
00	STOP	13	WE(4)
0-.0n	JOG DIAL (FRAME ADV. REVERSE ADV)	14	TH(5)
03.02	SHUTTLE RING (FF, REW)	15	FR(6)
—	TV/VTR	16	SA(7)
—	SCANNER ON/OFF	17	SU~SA(8)
—	TRANSMIT	18	MO~SA(9)
0	SEARCH	19	MO~FR(0)
8L	+ (REMOTE CONTROLLER)	3A	-/--
8	- (REMOTE CONTROLLER)		
—	DISPLAY		

Fig. D6 Service Data Display for Service mode 4

1–10–5. Timing Chart from Mode SW to System control IC6001

System control IC6001 senses the mechanism position though the Mode SW.
Fig.D7 shows the timing for Service Mode Number 2.


System Control IC6001
Mechanism
POSITION SW1 4
POSITION SW2 3
POSITION SW3 2
UNLOADING H 58
LOADING H 59
(MODE SW)
LOADING MOTOR
〈TIMING CHART〉
POSITION SW1 (IC6001-Pin4)
POSITION SW2 (IC6001-Pin3)
POSITION SW3 (IC6001-Pin2)
SERVICE DATA NUMBER*3
0 7 1 7 3 7 2 7 4 7 5 7 6
MODE
EJECT
CASSETTE DOWN
MID LOADING UNLOADING
REV REV SLOW
PLAY/REC STILL/PAUSE CUE FWD SLOW STOP 3*1
STOP*2
FF/REW

*1 : Stop 3; The Pinch Roller is on the capstan motor shaft.

*2 : Stop ; The Pinch Roller is off the capstan motor shaft.

*3 : Service Data Number; This is for Service Mode Number2.

Fig. D7 Timing Chart of Mode SW

2. MECHANICAL ADJUSTMENT PROCEDURES

2-1. TENSION POST POSITION ADJUSTMENT

(Equipment Required)
Hex Wrench (VFK0326)

1. Disconnect the AC plug.
2. Remove the TOP PLATE and CASSETTE HOLDER.
3. Turn the LOADING MOTOR until the loading completes.
4. Adjust the hole of TENSION BAND FASTENER by hex wrench so that the left edge of IMPEDANCE ROLLER and TENSION ARM UNIT as shown in Fig.M1.

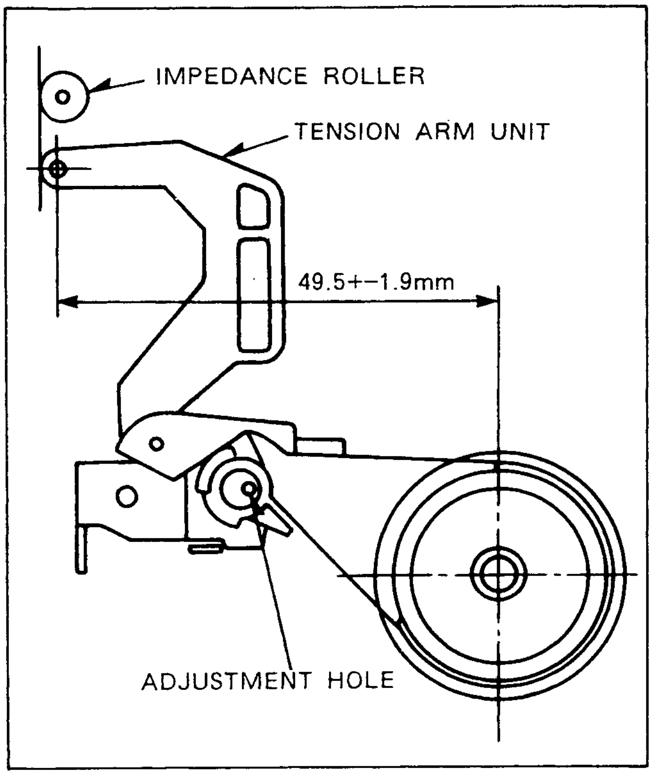


Fig. M1

2-2. BACK TENSION ADJUSTMENT

(Equipment Required)
Back Tension Meter (VFK0132)
VHS Cassette Tape (180 minutes tape: PAL)
(120 minutes tape: NTSC)

(Specification)
22.5−27.5g

1. Playback the cassette tape from the beginning and wait until the tape movement get the stabilization.
(for approx. 10~20 seconds)
2. Insert the Back tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig.M2.

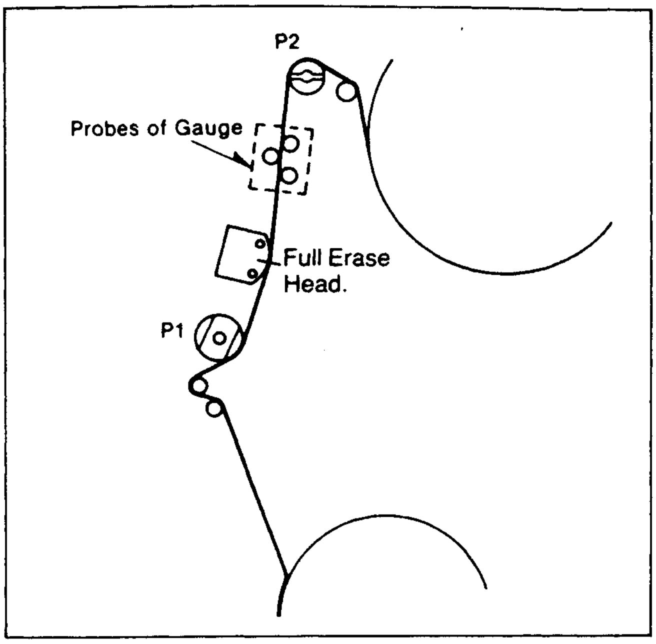


Fig. M2

3. If it is out of specification, change the spring notch as shown in Fig.M3.

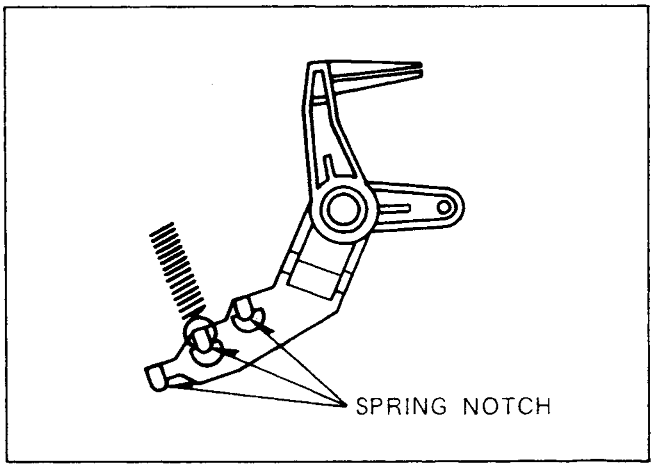
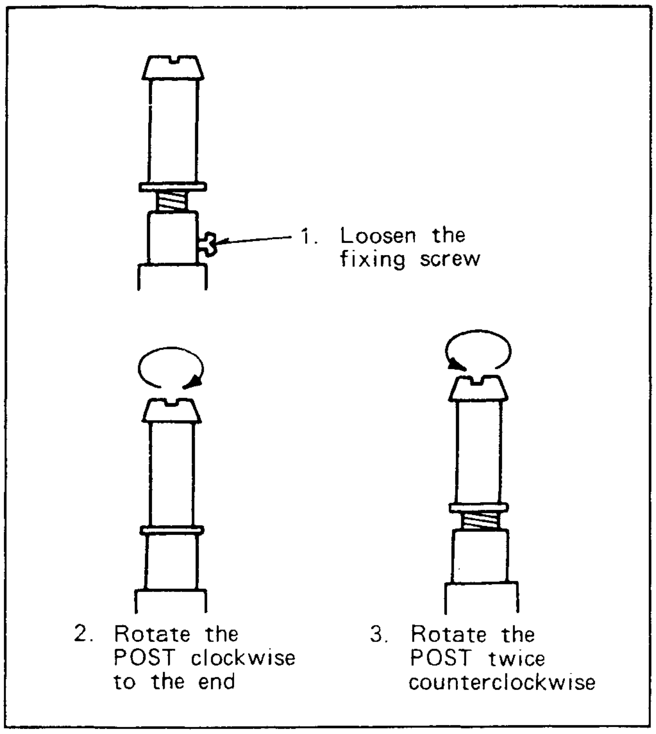


Fig. M3

2-3. P2 AND P3 POSTS ADJUSTMENT (PREADJUSTMENT)

(Equipment Required)
Post Adjustment Screwdriver (VFK0329)

1. Remove the TOP PLATE and CASSETTE HOLDER.
2. Turn the LOADING MOTOR until the unloading completes.
3. Loosen the fixing screw of P2 and P3 POSTS.
4. Rotate the P2 and P3 POSTS clockwise to the end.
5. Rotate the P2 and P3 POSTS twice counterclockwise.



1. Loosen the fixing screw

2. Rotate the POST clockwise to the end

3. Rotate the POST twice counterclockwise

Fig. M4

6. Install the TOP PLATE and CASSETTE HOLDER
7. Playback the cassette tape and make sure that the edges of the tape are not curling at the bottom or top end of the P1, P2, P3 and P4 POSTS as shown in Fig.M5.

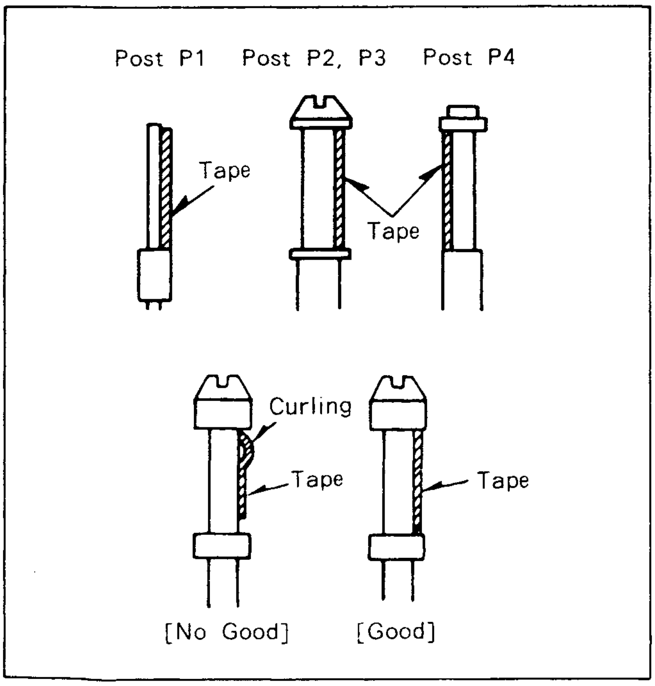

Post P1
Post P2, P3
Post P4
Tape
Tape
Curling
Tape
Tape
[No Good]
[Good]

Fig. M5

8. If curling appears, readjusts the P2 and P3 POSTS.

2-4. TAPE INTERCHANGEABILITY ADJUSTMENT

Carry out the following procedures for Tape interchangeability Adjustment to do it correctly and smoothly.

(1) Adjustment of P2 and P3 Posts.
(2) Height Adjustment of A/C Head (1).
(3) Height Adjustment of A/C Head (2).
(4) Fine-Adjustment of A/C Head
(5) Horizontal Position Adjustment of A/C Head.

If the Tape Interchangeability Adjustment is not perfect, repeat the above procedures from (1) to (5).

CAUTIONS:

To mark a Adjustment Mode for Tape Interchangeability, connect a Cut Jumper Wire as shown in Fig.M6.
(Auto Tracking is turned off.)
After finishing the adjustment, disconnect the Cut Jumper Wire.

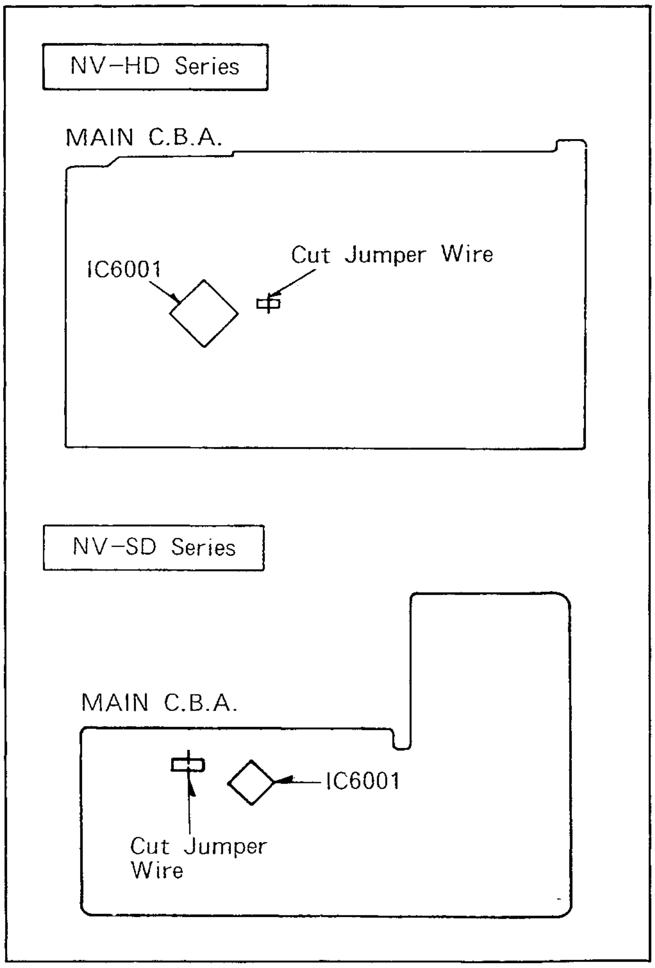

NV-HD Series
MAIN C.B.A.
IC6001
Cut Jumper Wire
NV-SD Series
MAIN C.B.A.
IC6001
Cut Jumper Wire

Fig. M6

(1) Adjustment of P2 and P3 Posts

(Equipment Required)
Alignment Tape(PAL/SECAM: VFJ8125H3F,
NTSC: VFM8080HQFP)
Post Adjustment Screwdriver (VFK0329)

1. Set the tracking control into the fix position. (by pressing the tracking (+) and (−) button simultaneously on the Remote Controller)
   And connect the oscilloscope to the output of the Head Amp as shown in Fig.M7.

Note:
To get a stable waveform of the Head Amp output on the oscilloscope, use the head switching pulse as a triggering signal as shown in Fig.M7.

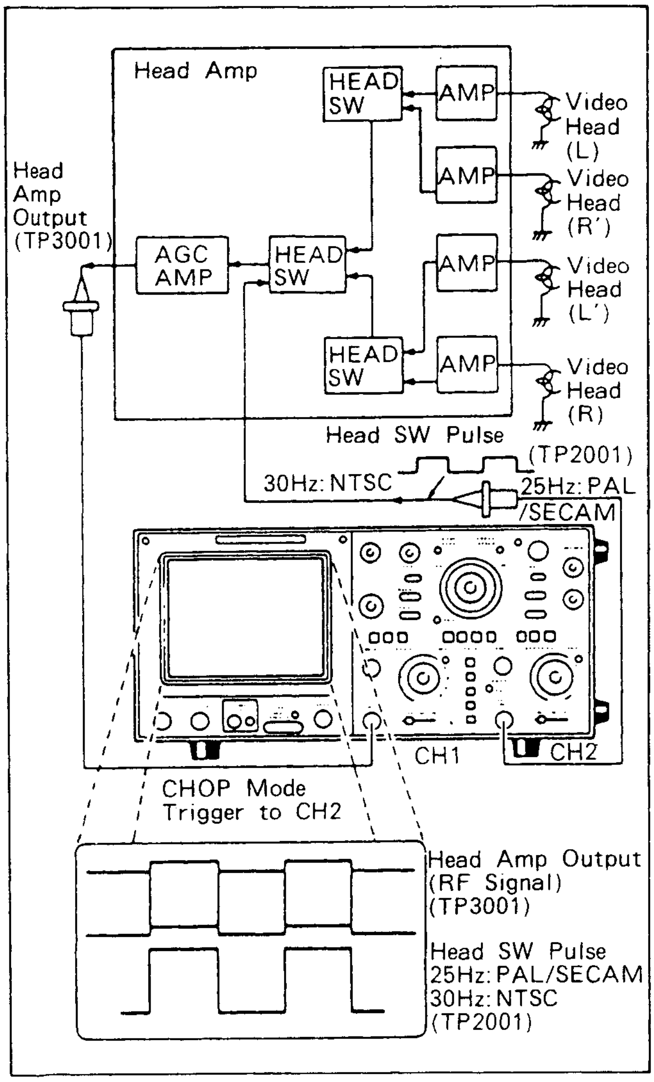

Head Amp
HEAD SW
AMP
Video Head (L)
AMP
Video Head (R')
Head Amp Output (TP3001)
AGC AMP
HEAD SW
AMP
Video Head (L')
HEAD SW
AMP
Video Head (R)
Head SW Pulse
(TP2001)
30Hz: NTSC
25Hz: PAL /SECAM
CH1
CH2
CHOP Mode
Trigger to CH2
Head Amp Output (RF Signal) (TP3001)
Head SW Pulse 25Hz: PAL/SECAM 30Hz: NTSC (TP2001)

Fig. M7 Connect of Oscilloscope

2. Playback the alignment tape.
3. If the RF envelope appears like example "A" or "B" in Fig.M8 then adjustment of the tape guide post (P2: Entrance) is necessary.
4. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig.M8−"C".

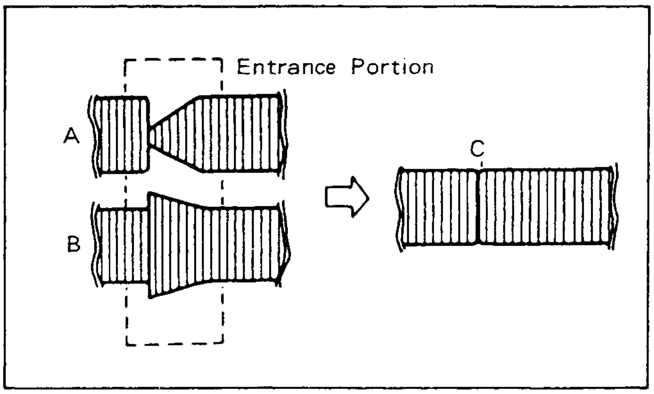

Entrance Portion
A
B
C

Fig. M8

5. If the RF envelope appears like example "D" or "E" in Fig.M9, then adjustment of the tape guide post (P3: Exit) is necessary.
6. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig.M9−"F".

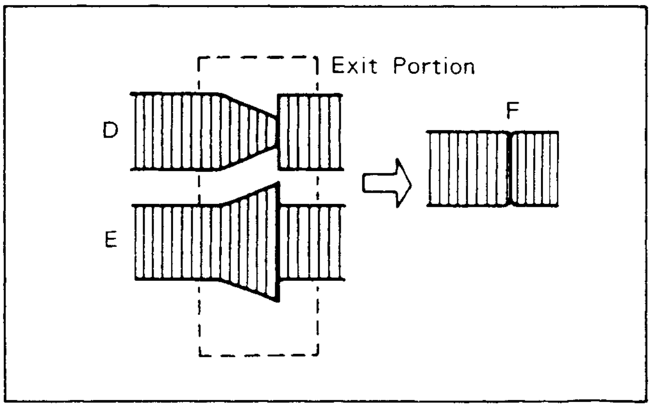

Exit Portion
D
E
F

Fig. M9

7. Turn the Tracking VR fully clockwise and counter clockwise. (Keep pressing + button or − button on the Remote Controller) The output envelope should vary nearly parallel with other condition as shown in Fig.M10.
8. Set the tracking control into centre fix position and adjust for maximum RF envelope, whilst being as flat as possible.

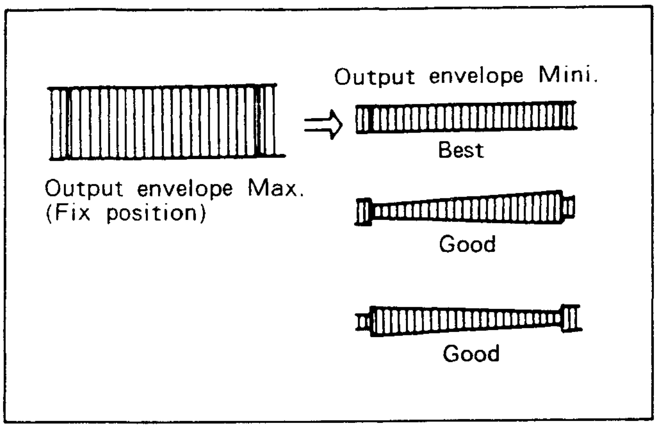

Output envelope Mini.
Best
Output envelope Max.
(Fix position)
Good
Good

Fig. M10

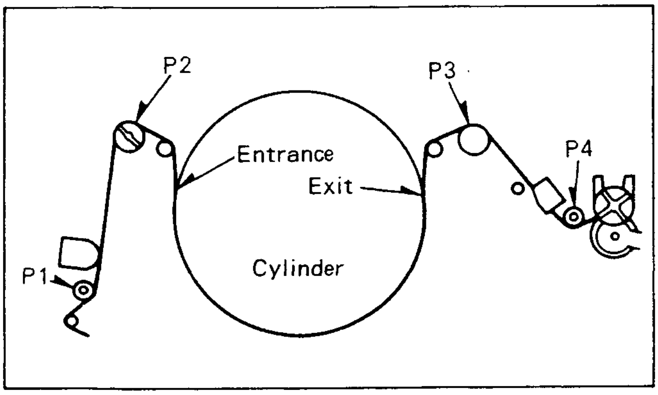

P2
P3
Entrance
Exit
P4
P1
Cylinder

Fig. M11 Loading of Posts

(2) Height Adjustment of A/C Head (1)

1) Install the A/C HEAD on the A/C HEAD BASE(E) by 3 screws (A),(B) and (C) with springs.
2) Tighten the screw (A) unit it touches chassis and then rotate the SCREW (A) counterclockwise for approx. 1.5 times.
3) Rotate the 2 screws(B) and (C) until A/C HEAD BASE(D) and (E) is separate.

CAUTION:
When adjusting the Screws (B) and (C) on the A/C HEAD BASE(E), do not touch the Screw Driver to the face of the A/C HEAD.

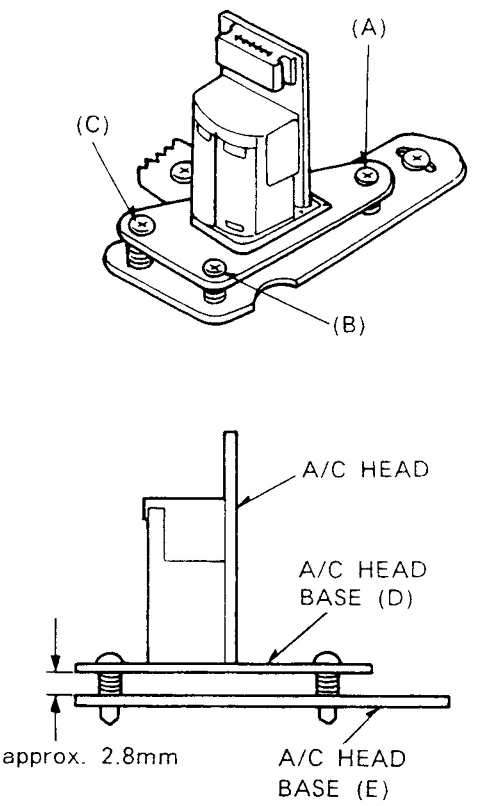
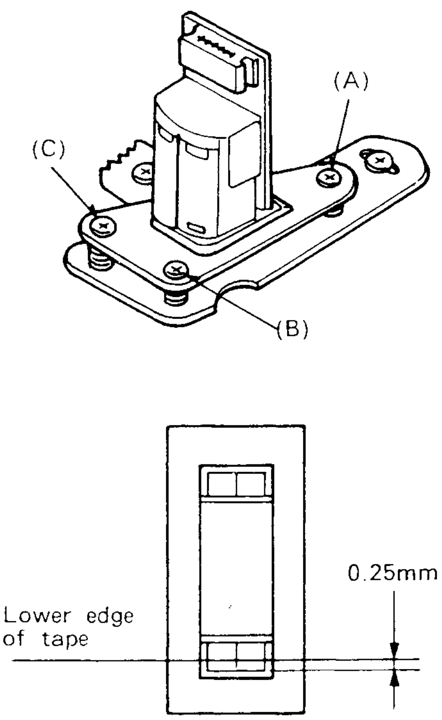

(A)
(C)
(B)
A/C HEAD
A/C HEAD BASE (D)
approx. 2.8mm
A/C HEAD BASE (E)

Fig. M12

(3) Height Adjustment of A/C Head (2)

1) Playback the alignment tape.
2) Rotate the screw (A) or (B) until the wrinkle appears on the lower edge of tape at P4 post.
3) Rotate the screw (A) or (B) until the wrinkle just disappears on the lower edge of tape at P4 post.
4) Connect the oscilloscope to audio output terminal.
5) Rotate the screw (C) until audio signal is maximized.



	SCREW (A)	SCREW (B)
So wrinkle appears on the lower edge of tape	COUNTER' CLOCKWISE	CLOCKWISE
So wrinkle disappears on the lower edge of tape	CLOCKWISE	COUNTER CLOCKWISE

Fig. M13

(4) Fine-Adjustment of A/C HEAD

<When moving the A/C HEAD up>

1) Rotate the screw (A) counterclockwise until the wrinkle appears on the lower edge of tape at P4 post.
2) Rotate the screw (B) counterclockwise until the wrinkle just disappears on the lower edge of tape at P4 post.
3) Rotate the screw (C) counterclockwise until the audio signal is maximized.

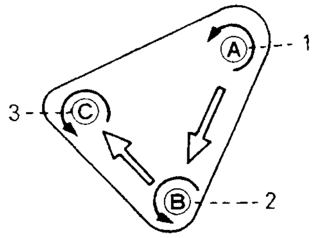


Fig. M14

<When moving the A/C HEAD down>

1) Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape a P4 post.
2) Rotate the screw (A) clockwise until the wrinkle just disappears on the lower edge of tape at P4 post.
3) Rotate the screw (C) clockwise until the audio signal is miximized.

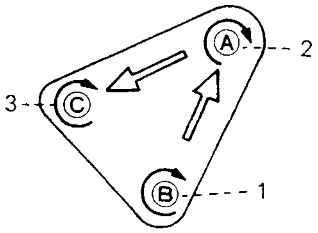


Fig. M15

(5) Horizontal Position Adjustment of A/C HEAD

1) Set the tracking control into the centre fix position. (by pressing the tracking (+) and (−) button simultaneously on the Remote Controller)
2) Connect the oscilloscope to the output of the Head Amp as shown in Fig.M7.
3) Playback the alignment tape.
4) Loosen the 2 screws (F) and (G).
5) Adjust the A/C HEAD BASE (E) until the RF envelope waveform is maximized.

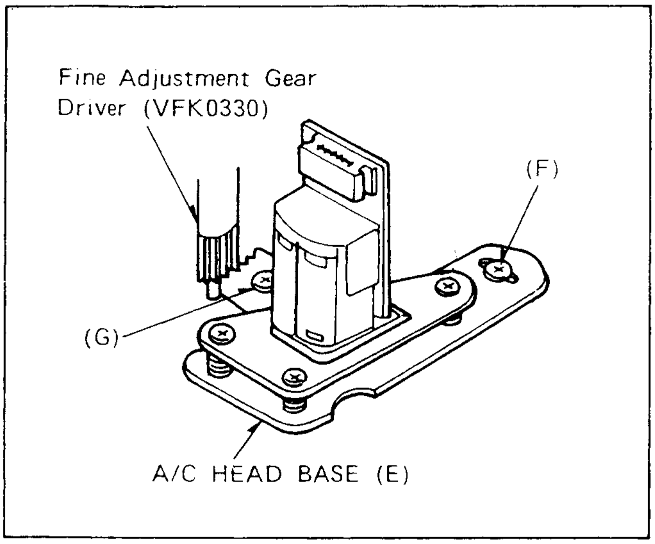

Fine Adjustment Gear
Driver (VFK0330)
(F)
(G)
A/C HEAD BASE (E)

Fig. M16

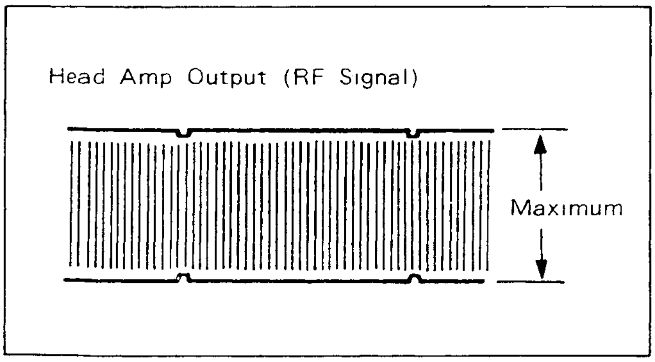
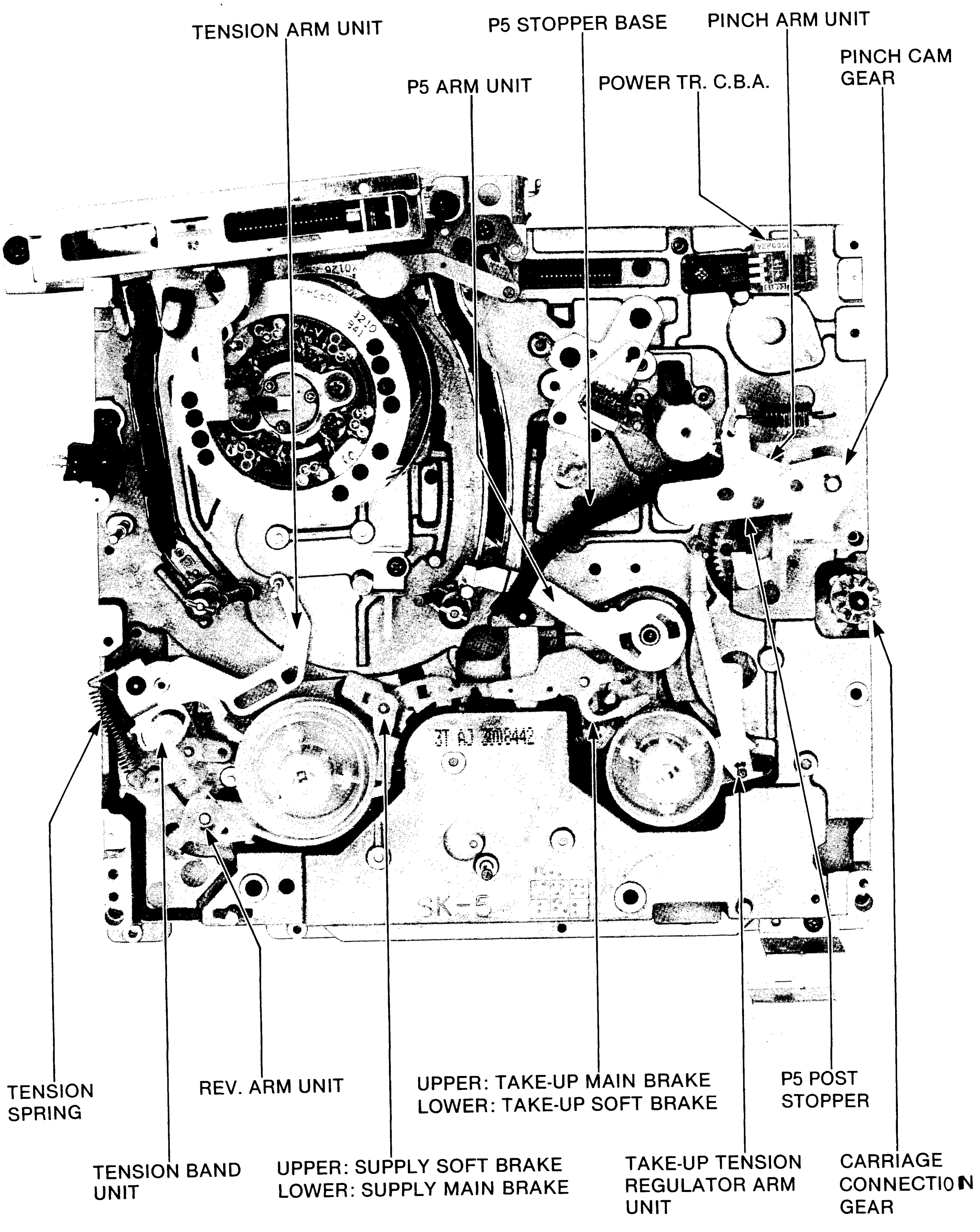

Head Amp Output (RF Signal)
Maximum

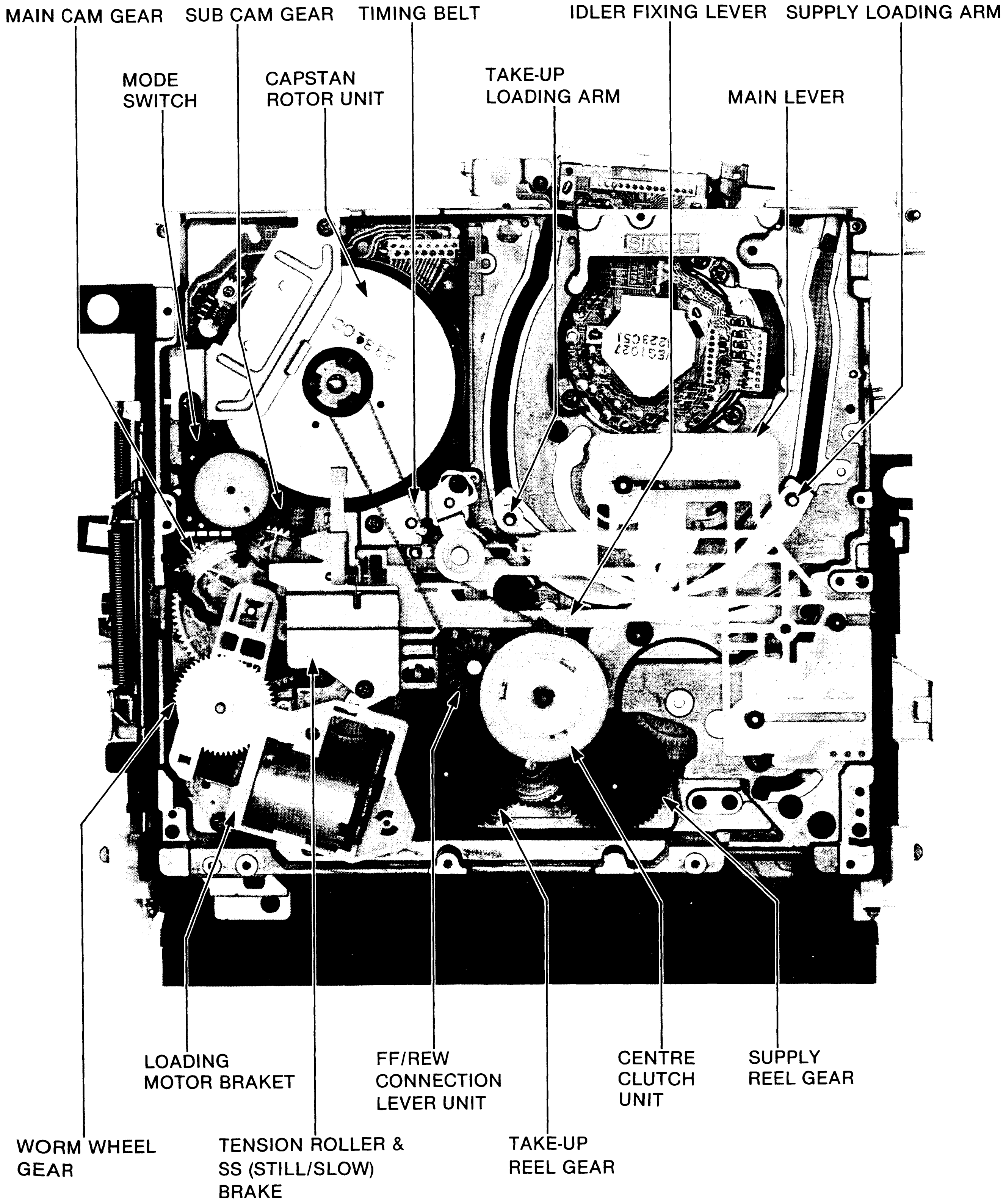
Fig. M17

3. DISASSEMBLY PROCEDURES OF MECHANISM

In order to remove the mechanism components it is first necessary to remove the mechanism chassis.


TENSION ARM UNIT
P5 STOPPER BASE
PINCH ARM UNIT
PINCH CAM GEAR
P5 ARM UNIT
POWER TR. C.B.A.
TENSION SPRING
REV. ARM UNIT
UPPER: TAKE-UP MAIN BRAKE
LOWER: TAKE-UP SOFT BRAKE
P5 POST STOPPER
TENSION BAND UNIT
UPPER: SUPPLY SOFT BRAKE
LOWER: SUPPLY MAIN BRAKE
TAKE-UP TENSION REGULATOR ARM UNIT
CARRIAGE CONNECTION GEAR

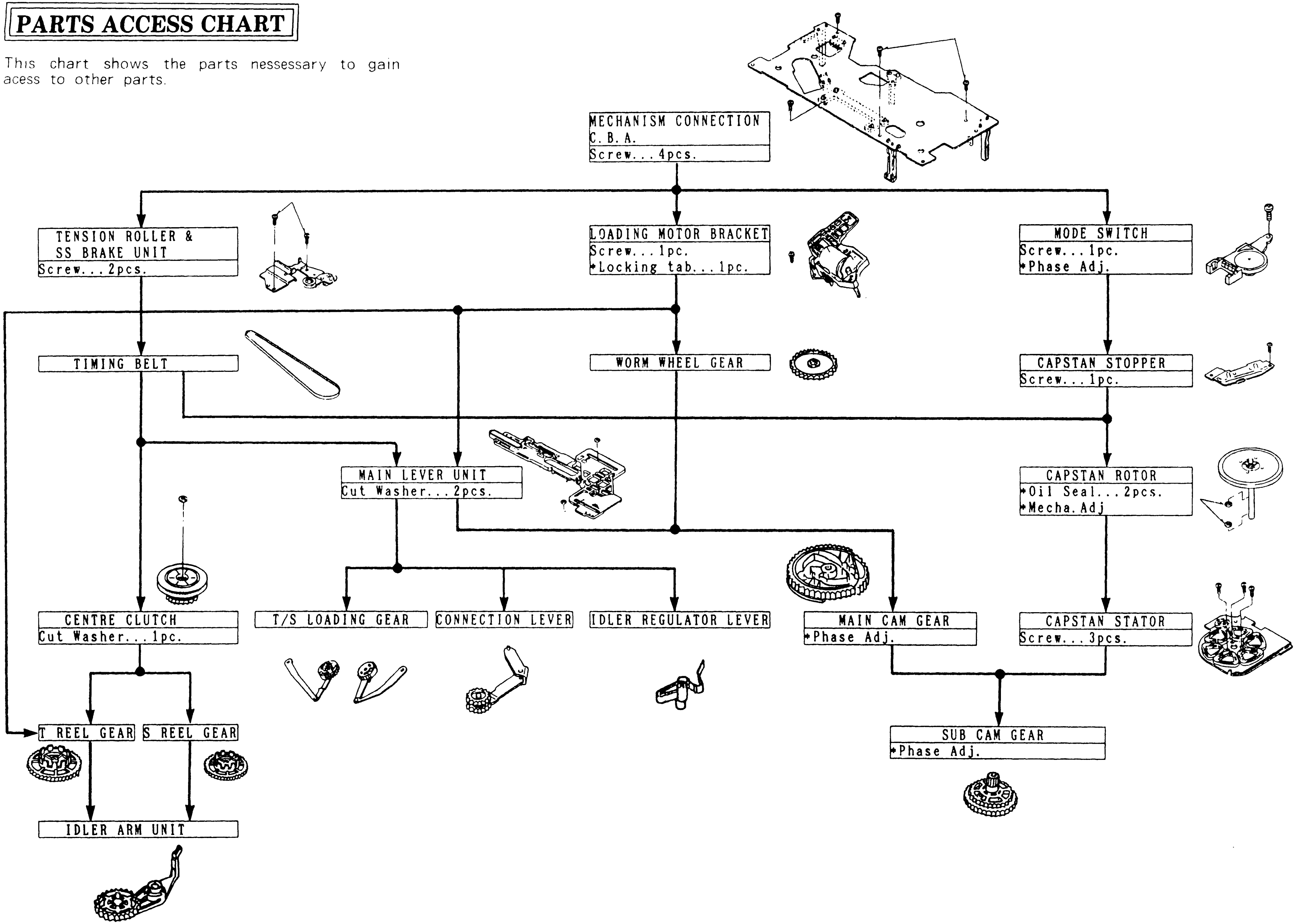
TOP VIEW OF K-MECHANISM


MAIN CAM GEAR
SUB CAM GEAR
TIMING BELT
IDLER FIXING LEVER
SUPPLY LOADING ARM
MODE SWITCH
CAPSTAN ROTOR UNIT
TAKE-UP LOADING ARM
MAIN LEVER
LOADING MOTOR BRAKET
FF/REW CONNECTION LEVER UNIT
CENTRE CLUTCH UNIT
SUPPLY REEL GEAR
WORM WHEEL GEAR
TENSION ROLLER & SS (STILL/SLOW) BRAKE
TAKE-UP REEL GEAR

BOTTOM VIEW OF K-MECHANISM

PARTS ACCESS CHART

This chart shows the parts nessessary to gain acess to other parts.


MECHANISM CONNECTION C.B.A.
Screw...4pcs.
TENSION ROLLER & SS BRAKE UNIT
Screw...2pcs.
LOADING MOTOR BRACKET
Screw...1pc.
*Locking tab...1pc.
MODE SWITCH
Screw...1pc.
*Phase Adj.
TIMING BELT
WORM WHEEL GEAR
CAPSTAN STOPPER
Screw...1pc.
MAIN LEVER UNIT
Cut Washer...2pcs.
CAPSTAN ROTOR
*Oil Seal...2pcs.
*Mecha.Adj
CENTRE CLUTCH
Cut Washer...1pc.
T/S LOADING GEAR
CONNECTION LEVER
IDLER REGULATOR LEVER
MAIN CAM GEAR
*Phase Adj.
CAPSTAN STATOR
Screw...3pcs.
T REEL GEAR
S REEL GEAR
SUB CAM GEAR
*Phase Adj.
IDLER ARM UNIT

3-1. REMOVAL OF THE MECHANISM CHASSIS

1) Remove the 2 screws(A) push the HOLDER PLATE slightly to the rear of mechanism.
2) Remove the screw(B).
3) Disconnect all cables and connectors on the mechanism chassis and connector P6003 on the MAIN C.B.A.(connecting to DEW SENSOR). (Use extreme care when disconnecting the P1508)
4) Lift the mechanism chassis out of the unit.

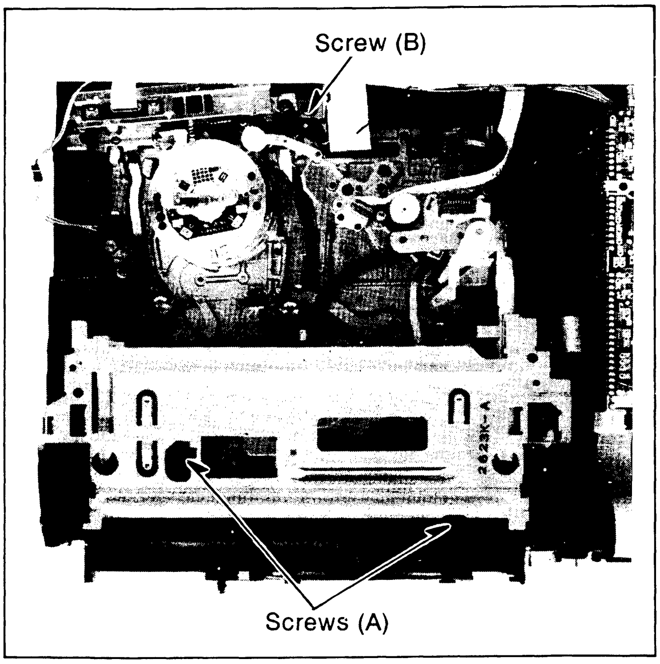

Screw (B)
Screws (A)

Fig. A1

3-2. REMOVAL OF THE MECHANISM CONNECTION C.B.A.

1) Remove the 4 screws(C).
2) Lift up on the C.B.A.

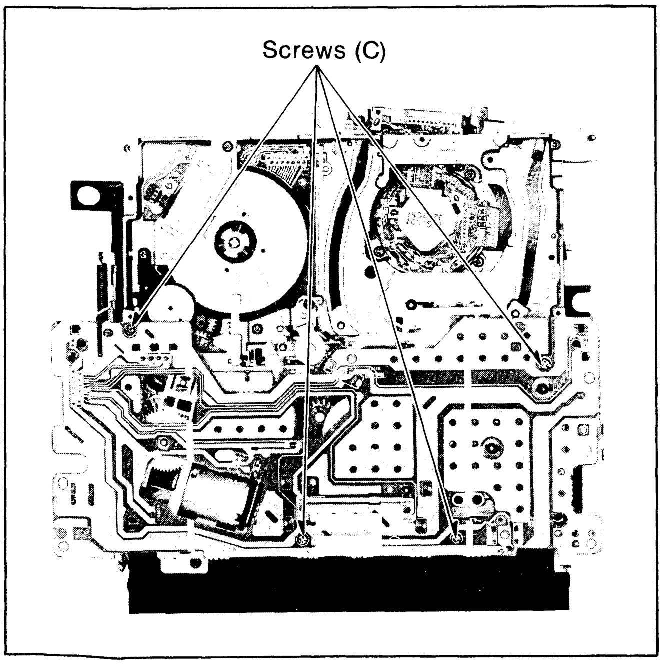


Fig. A2

3-3. REMOVAL OF THE TENSION ROLLER AND SS BRAKE

1) Remove the 2 screws(D).
2) Remove the TENSION ROLLER and the SS BRAKE.

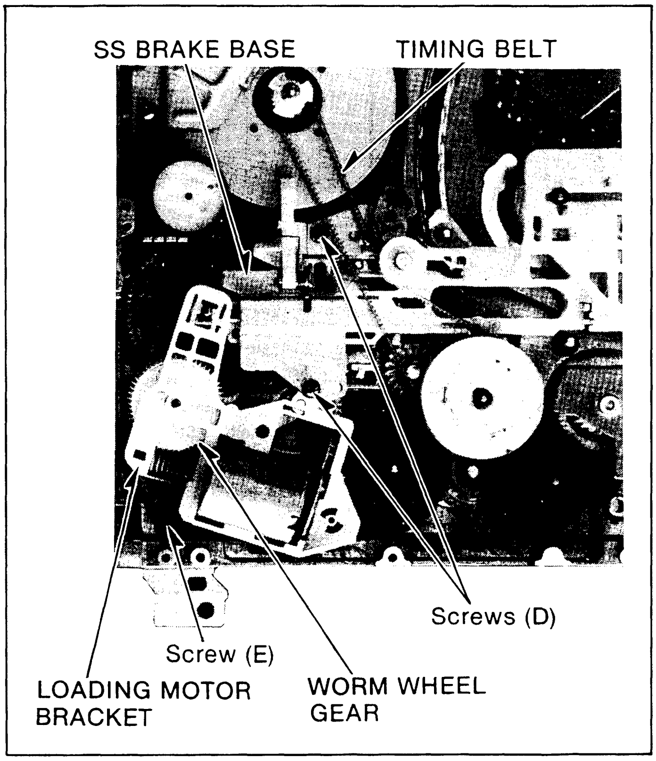

SS BRAKE BASE
TIMING BELT
Screws (D)
Screw (E)
LOADING MOTOR BRACKET
WORM WHEEL GEAR

Fig. A3

3-4. REMOVAL OF THE TIMING BELT

1) Remove the TIMING BELT.

3-5. REMOVAL OF THE LOADING MOTOR BRACKET

1) Remove the screw(E) as shown in Fig.A3.
2) Disconnect the locking tab on the right by pushing the locking tab in as shown in Fig.A4.
3) Lift up on the LOADING MOTOR BRACKET and push the BRACKET towards the MAIN CAM GEAR as shown in Fig.A3.
4) Lift the WORM WHEEL GEAR off the shaft.

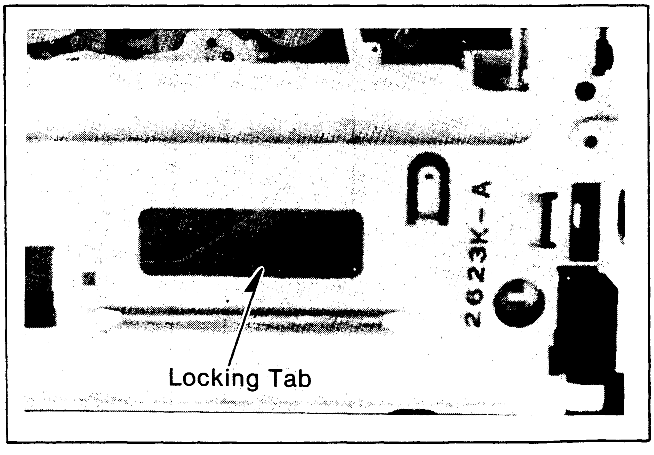

2623K-A
Locking Tab

Fig. A4

3-6. REMOVAL OF THE MAIN LEVER UNIT

1) Remove the 3 cut washers.
2) Remove the MAIN LEVER UNIT.

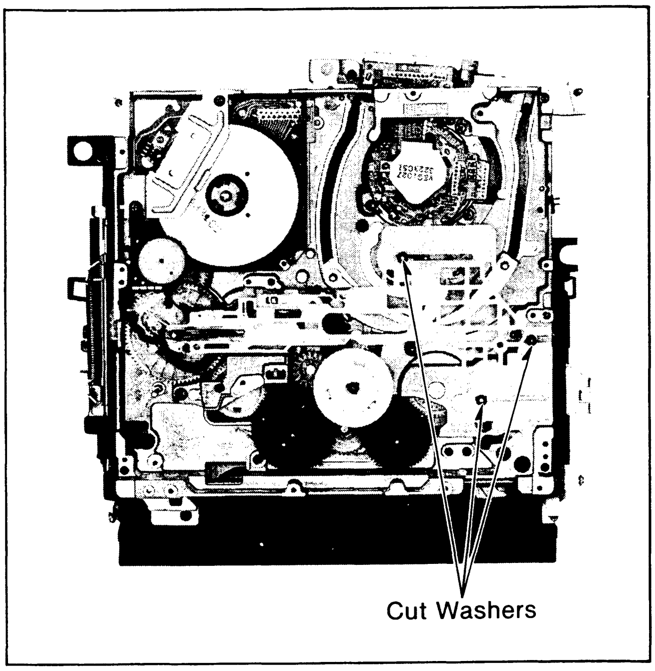

Cut Washers

Fig. A5

3-7. REMOVAL OF THE TAKE-UP AND SUPPLY LOADING ARMS

1) Remove the TAKE-UP and SUPPLY LOADING GEARs by lifting them up off the post.

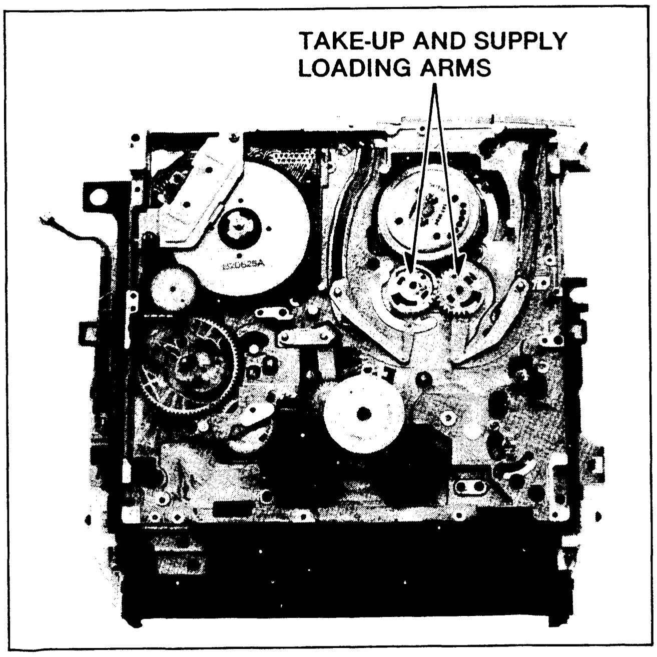

TAKE-UP AND SUPPLY
LOADING ARMS

Fig. A6

3-8. REMOVAL OF THE MODE SWITCH

1) Remove screw(F).
2) Remove the MODE SWITCH.

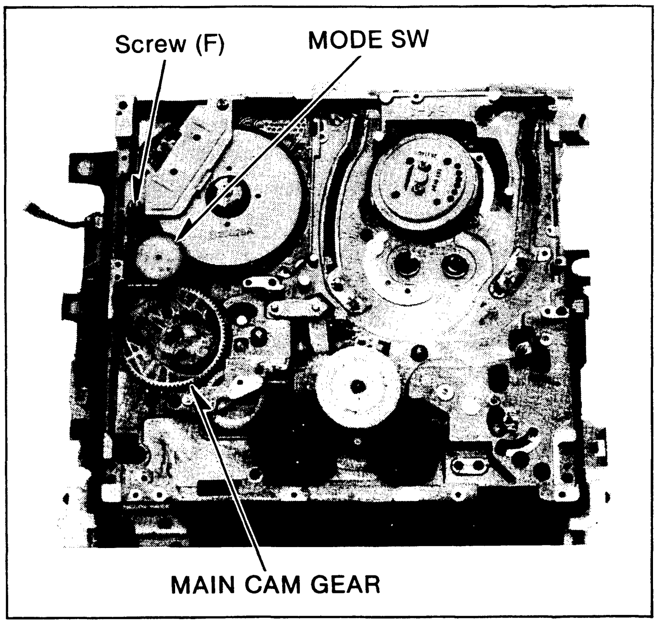

Screw (F)
MODE SW
MAIN CAM GEAR

Fig. A7

3-9. REMOVAL OF THE MAIN CAM GEAR

1) Lift the MAIN CAM GEAR off the shaft.

3-10. REMOVAL OF THE CAPSTAN ROTOR UNIT

1) Remove the screw(G) and remove the CAPSTAN STOPPER as shown in Fig.A8.

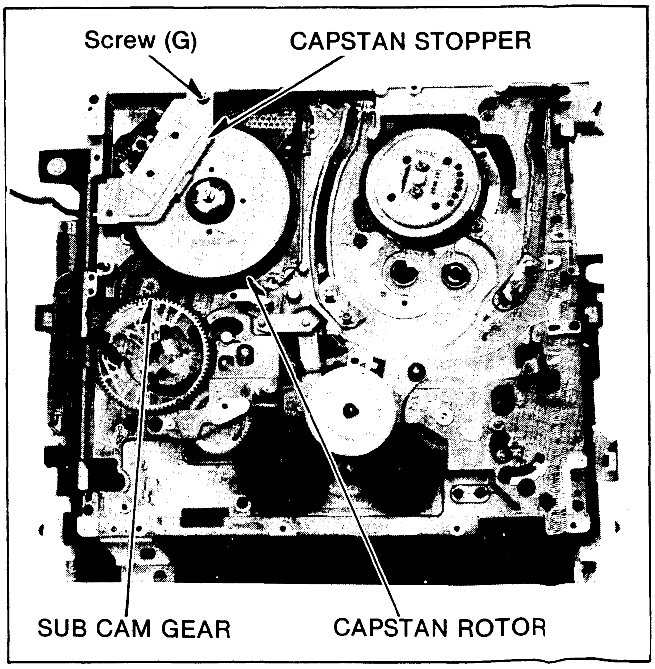

Screw (G)
CAPSTAN STOPPER
SUB CAM GEAR
CAPSTAN ROTOR

Fig. A8

2) Pull out the CAPSTAN ROTOR.
(When the CAPSTAN ROTOR is removed, 2 OIL SEALs are left in the CAPSTAN ROTOR HOUSING Fig.A9.. To avoid losing the OIL SEALs, place them back on the CAPSTAN SHAFT.)

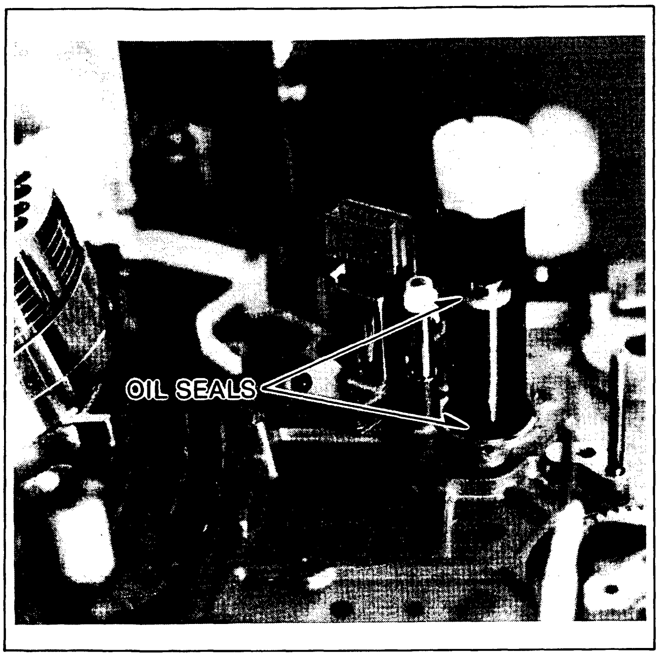


Fig. A9

3) Remove the 3 screws(H) and remove the CAPSTAN STATOR as shown in Fig.A10.

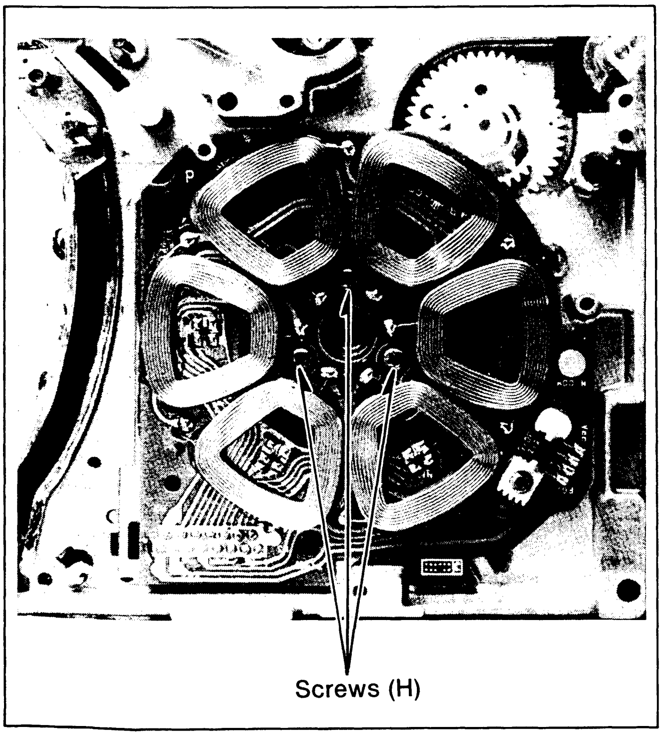


Fig. A10

3-11. REMOVAL OF THE SUB CAM GEAR

1) Lift the SUB CAM GEAR off the shaft.

3-12. REMOVAL OF THE CENTRE CLUTCH

1) Remove the cut washer.
2) Remove the CENTRE CLUTCH.

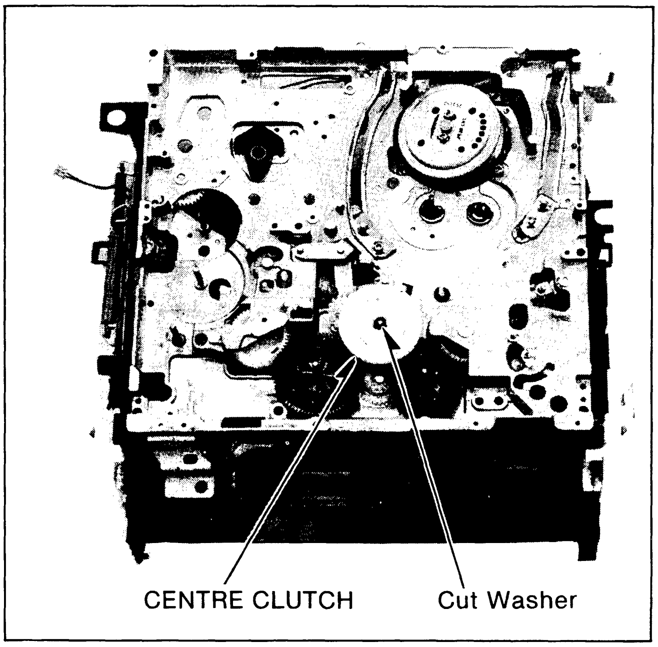

CENTRE CLUTCH
Cut Washer

Fig. A11

3-13. REMOVAL OF THE TAKE-UP AND SUPPLY REEL GEARS

1) Unlock the locking tab and lift up on the reel.

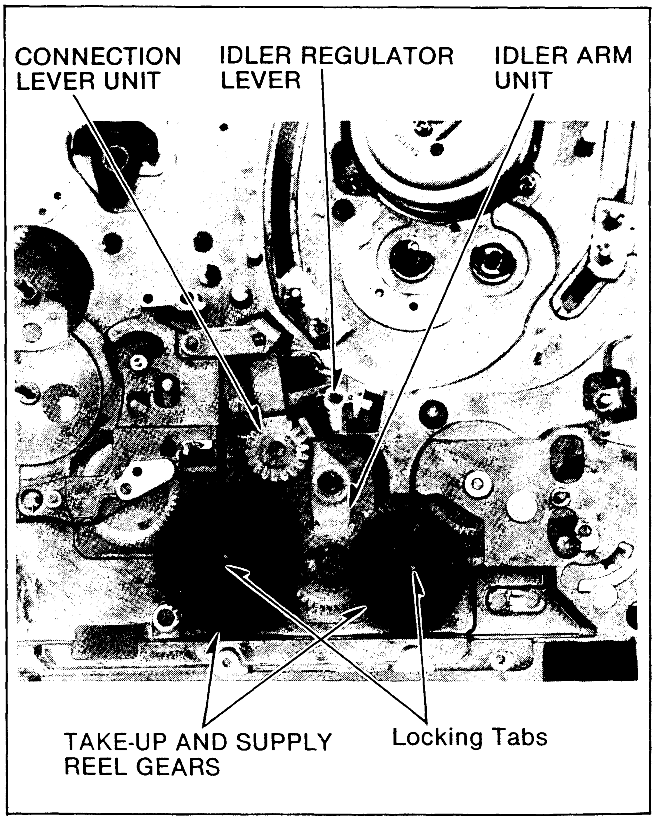

CONNECTION LEVER UNIT
IDLER REGULATOR LEVER
IDLER ARM UNIT
TAKE-UP AND SUPPLY REEL GEARS
Locking Tabs

Fig. A12

3-14. REMOVAL OF THE IDLER ARM UNIT, CONNECTION LEVER UNIT AND IDLER REGULATOR LEVER

1) Lift the IDLER ARM UNIT and CONNECTION LEVER UNIT off the shaft.
2) Remove the IDLER REGULATOR LEVER.

3-15. REMOVAL OF THE TOP PLATE

1) Push the locking tabs from the outer side to inside as shown in Fig.A13.
2) Lift up on the TOP PLATE.

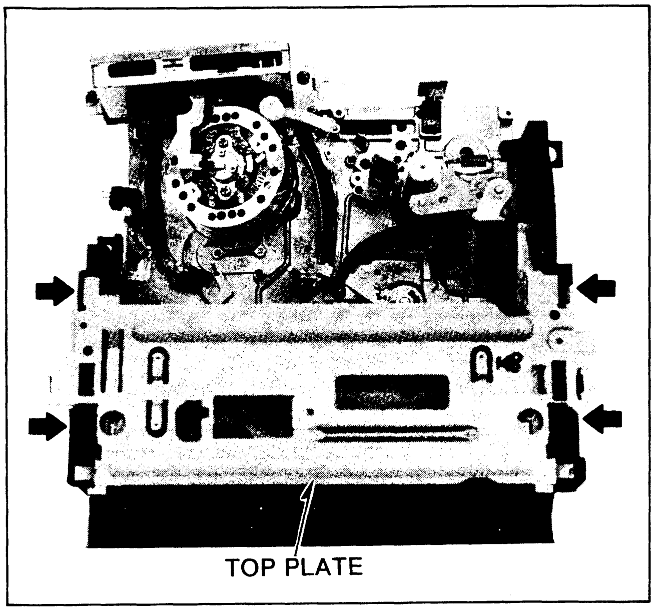


Fig. A13

NOTE:
If locking tab is broken, TOP PLATE can be installed by screws(XTB26+8G) as shown in Fig.A14.

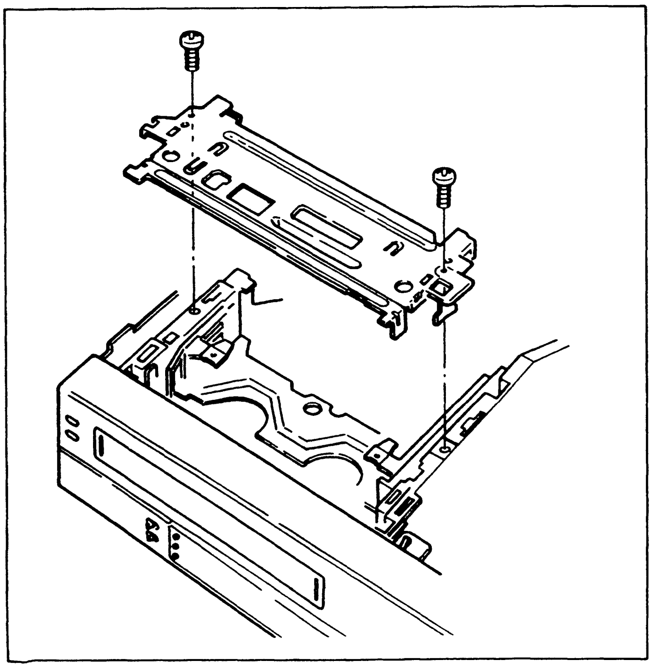


Fig. A14

3-16. REMOVAL OF THE CASSETTE HOLDER

1) Slide the HOLDER PLATE in the rear and lift up.
2) Remove the 4 screws(I).
3) Remove the CASSETTE HOLDER.

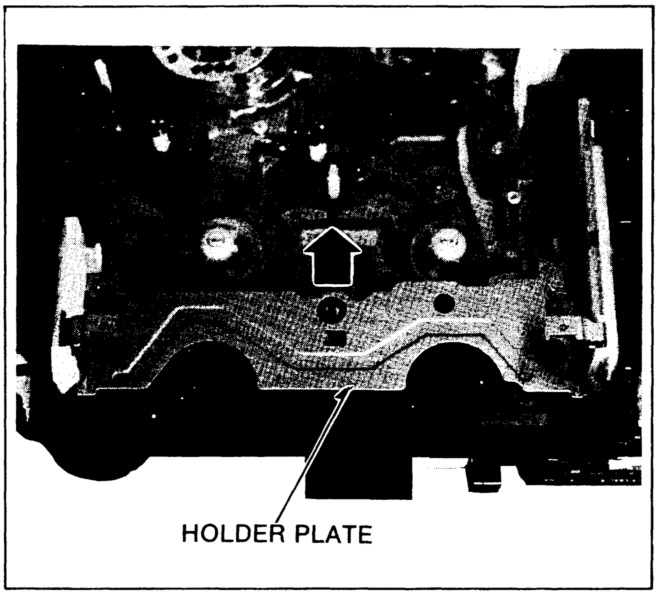


Fig. A15

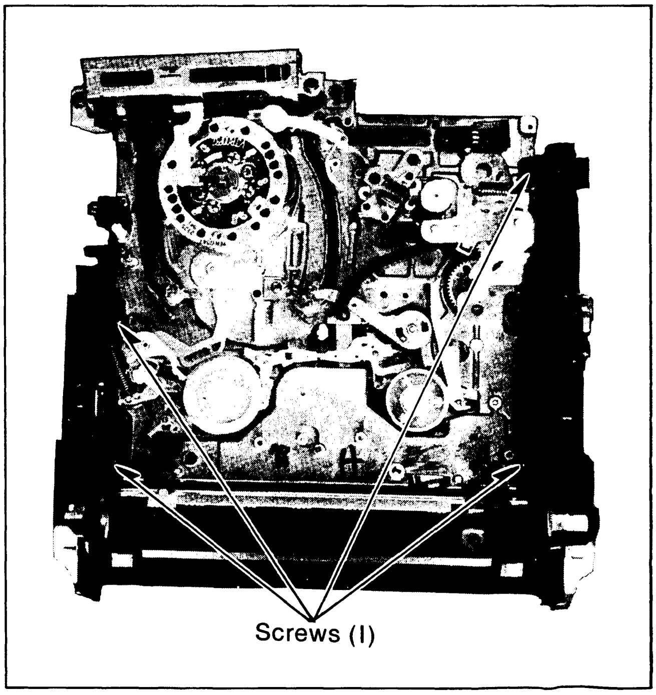


Fig. A16

3-17. REMOVAL OF THE PINCH ARM UNIT

1) Unlock the locking tab on the OPENER PIECE and remove it from the shaft.
2) Remove the PINCH ARM UNIT from the shaft.

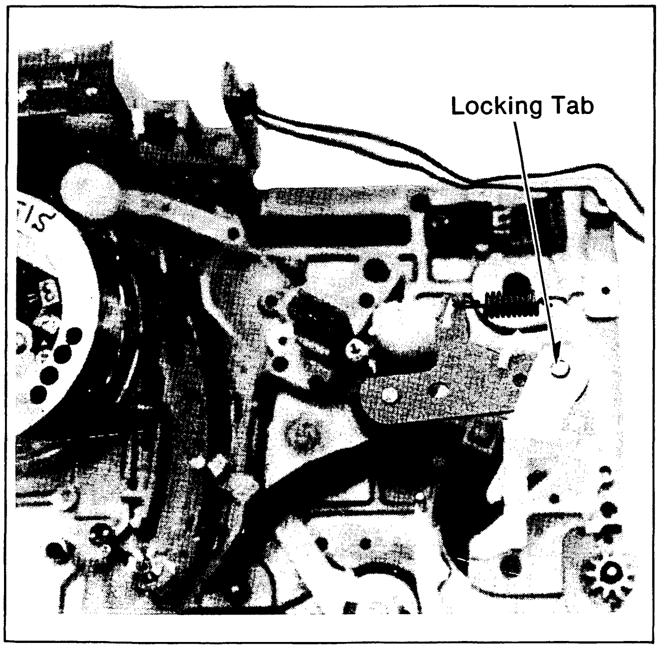

Locking Tab

Fig. A17

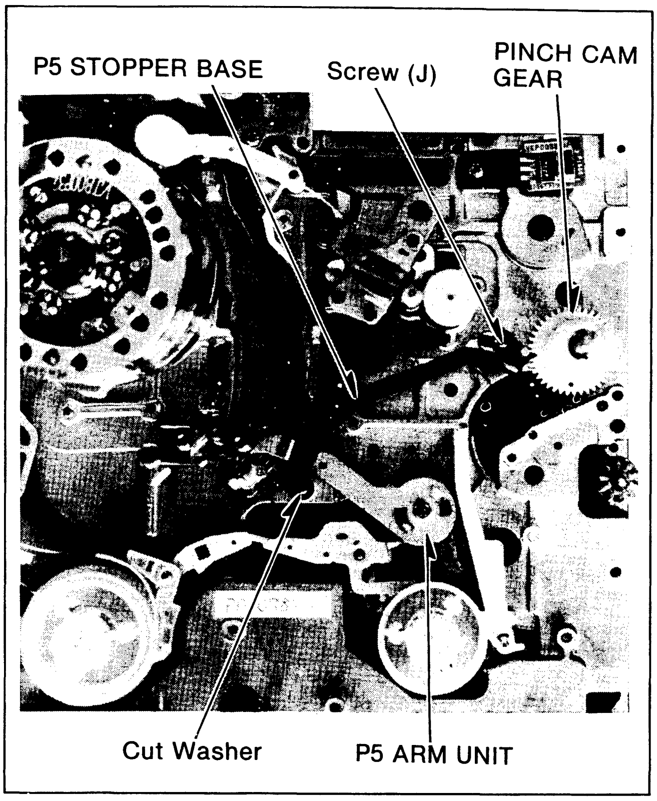

P5 STOPPER BASE
Screw (J)
PINCH CAM GEAR
Cut Washer
P5 ARM UNIT

Fig. A19

3-18. REMOVAL OF THE PINCH CAM GEAR AND P5 ARM UNIT

1) Unlock the locking tab of the P5 STOPPER and remove the P5 STOPPER.
2) Remove the screw(J) and the cut washer.
3) Remove the P5 STOPPER BASE.
4) Remove the PINCH CAM GEAR and P5 ARM UNIT.

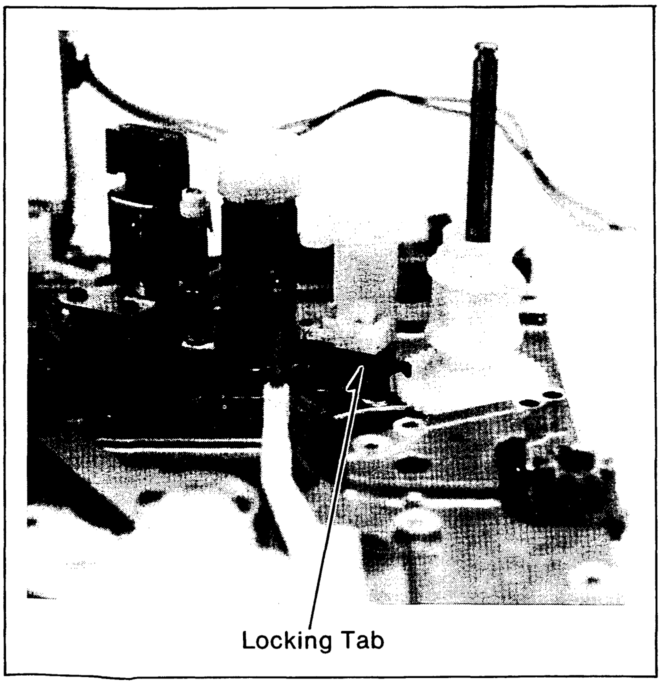

Locking Tab

Fig. A18

3-19. REMOVAL OF THE TAKE-UP TENSION REGULATOR ARM UNIT

1) Disconnect the spring from the bottom of the chassis.
2) Unlock the locking tab and lift the TAKE-UP TENSION REGULATOR ARM UNIT off the shaft.

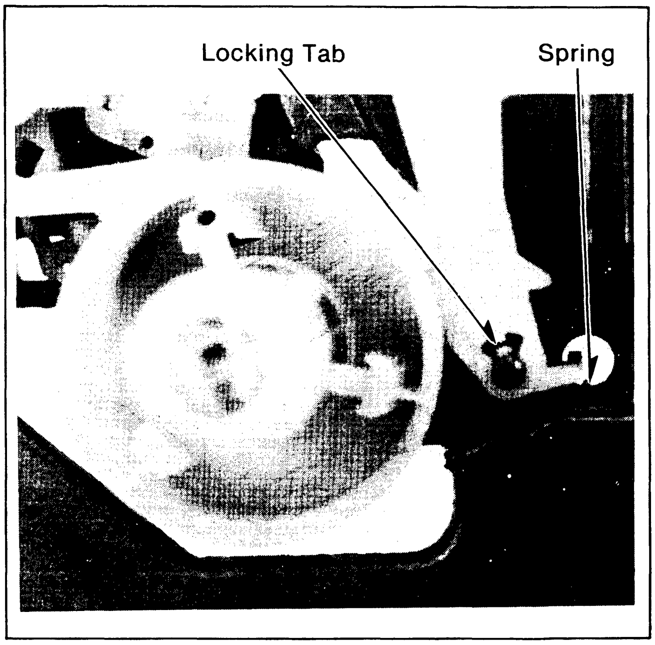

Locking Tab
Spring

Fig. A20

3-20. REMOVAL OF THE CARRIAGE CONNECTION GEAR

1) Remove the cut washer.
2) Lift the CARRIAGE CONNECTION GEAR off the shaft.

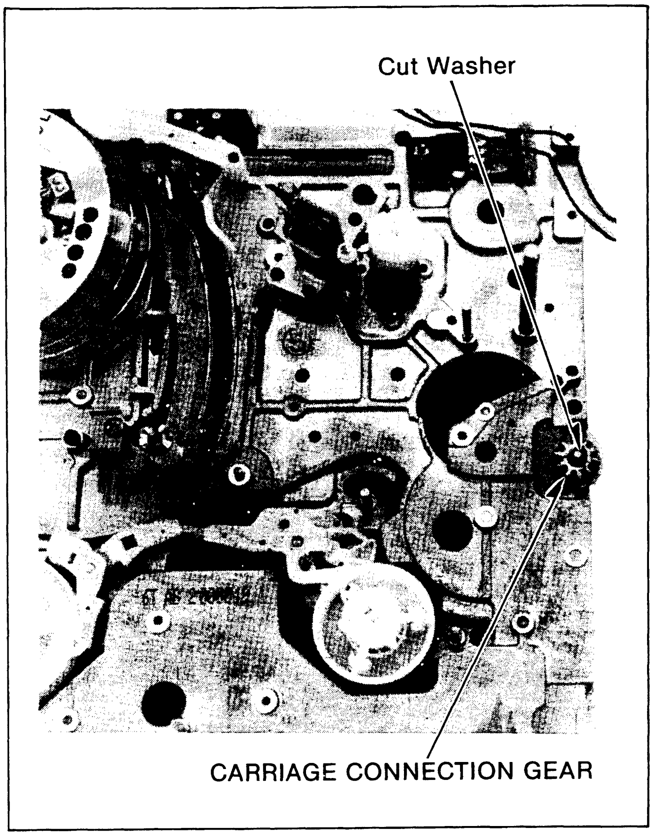

Cut Washer
CARRIAGE CONNECTION GEAR

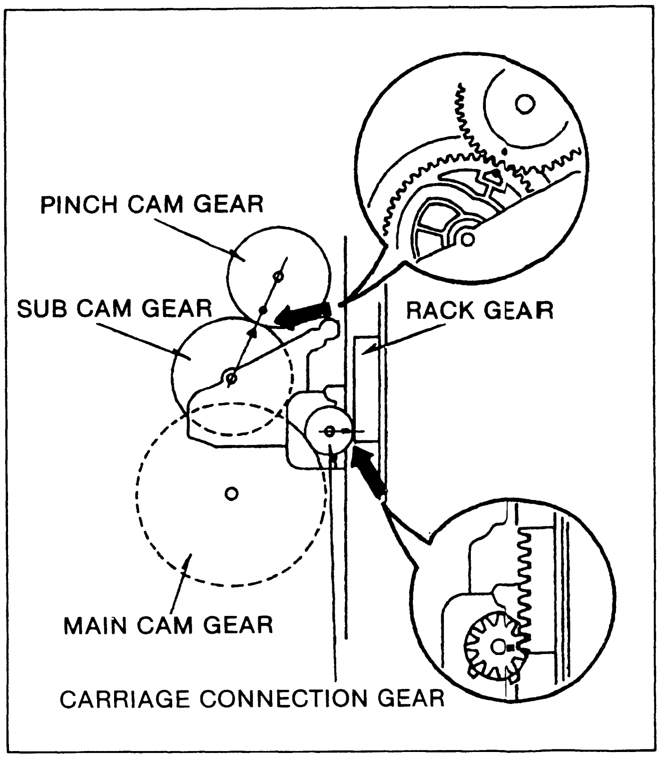
Fig. A21

4. ASSEMBLY PROCEDURES OF MECHANISM

4-1. VIEW OF PHASE ALIGNMENT

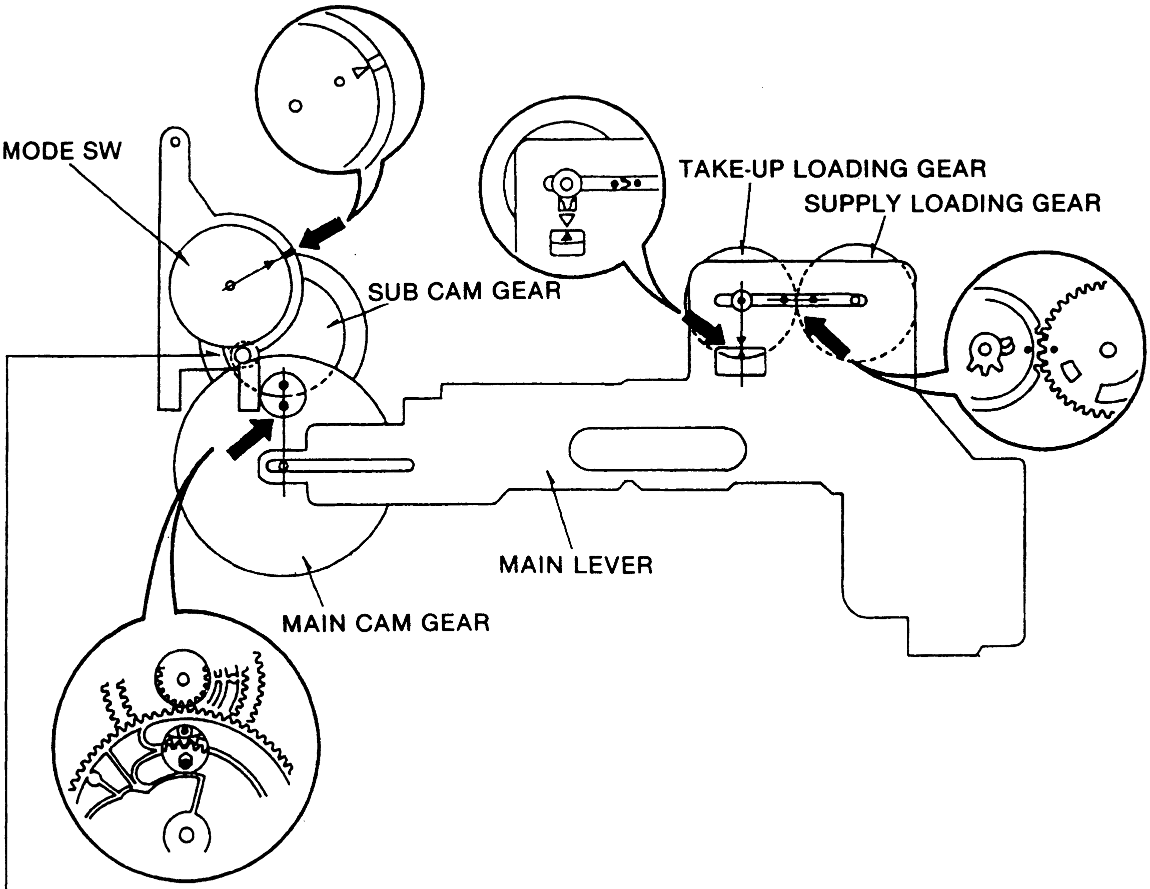
The gear phase alignment is performed in the cassette down position and is crucial for the K-Mechanism to operate correctly.

1) Top View of Gear Phase Alignment Marks.
   There are alignment marks on the Pinch Cam Gear and Sub Cam Gear. There is one alignment mark on the carriage connection gear.


PINCH CAM GEAR
SUB CAM GEAR
RACK GEAR
MAIN CAM GEAR
CARRIAGE CONNECTION GEAR

Top View of Gear Phase Alignment

2) Bottom View of Gear Phase Alignment Marks. There are alignment marks on Take–up Loading Gear and Supply Loading Gear. There is an additional mark on the Take–up Loading Gear that aligns with the mark on the main lever. There are alignment marks on the Main Cam Gear and the Sub Cam Gear. The mode switch gear mark aligns with a notch in the mode switch frame.


MODE SW
TAKE-UP LOADING GEAR
SUPPLY LOADING GEAR
SUB CAM GEAR
MAIN LEVER
MAIN CAM GEAR

There is a hole on the Sub–Cam Gear and a hole on the chassis that are used for alignment reference.

Bottom View of Gear Phase Alignment

4-2. ASSEMBLY OF THE CARRIAGE CONNECTION

1) Install the CARRIAGE CONNECTION GEAR as shown in Fig.A21.
2) Install the cut washer.

4-3. ASSEMBLY OF THE TAKE-UP TENSION REGULATOR ARM UNIT, P5 ARM UNIT PINCH CAM GEAR, P5 STOPPER BASE, P5 STOPPER, PINCH CAM UNIT AND OPENER PIECE

1) Install the TAKE-UP TENSION REGULATOR ARM UNIT.
2) Hook the spring to hole on the chassis.
3) Install the P5 ARM UNIT and PINCH CAM GEAR.
4) Install the P5 STOPPER BASE with cut washer and screw(J).
5) Install the P5 STOPPER, PINCH ARM UNIT and OPENER PIECE.

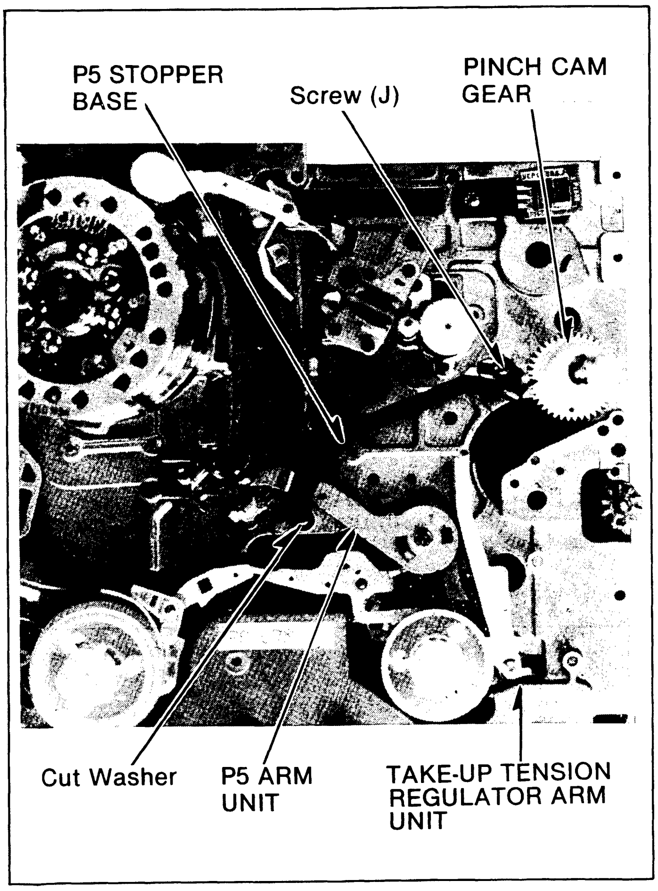

P5 STOPPER BASE
Screw (J)
PINCH CAM GEAR
Cut Washer
P5 ARM UNIT
TAKE-UP TENSION REGULATOR ARM UNIT

Fig. K1

4-4. ASSEMBLY OF THE IDLER ARM UNIT, TAKE-UP AND SUPPLY REEL GEARS, IDLER REGULATOR LEVER,CONNECTION LEVER UNIT AND CENTRE CLUTCH

1) Install the IDLER UNIT, TAKE-UP and SUPPLY REEL GEARs, IDLER REGULATOR LEVER and CONNECTION LEVER UNIT.
2) Install the CENTRE CLUTCH with cut washer.

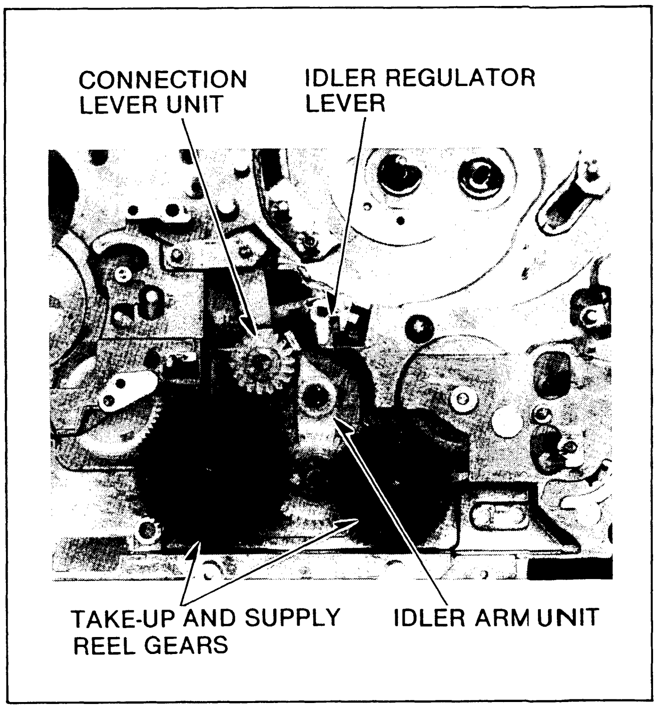

CONNECTION LEVER UNIT
IDLER REGULATOR LEVER
TAKE-UP AND SUPPLY REEL GEARS
IDLER ARM UNIT

Fig. K2

4-5. ASSEMBLY OF THE SUB CAM GEAR

The SUB CAM GEAR is used for the reference of the phase.

1) Install the SUB CAM GEAR so that the chassis hole aligns with hole in the SUB CAM GEAR. Also, the hole in the outer gear of the SUB CAM GEAR must align with the hole in the PINCH CAM GEAR. The boss on the PINCH ARM must be installed in the cam groove of the SUB-CAM GEAR. This is used for the reference of the phase. To aid installation of the SUB-CAM GEAR insert a fixing pin into the holes of the SUB-CAM GEAR and the chassis.

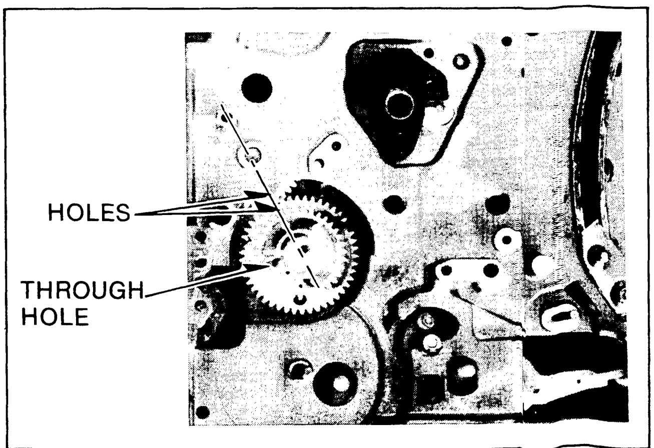

HOLES
THROUGH HOLE

Fig. K3

4-6. ASSEMBLY OF THE STATOR UNIT

1) Place the STATOR UNIT into position. Loosely reinstall the 3 screws that secure the STATOR and HOUSING UNIT. Next insert the CENTERING PIN then tighten the 3 screws as shown in Fig.K4.

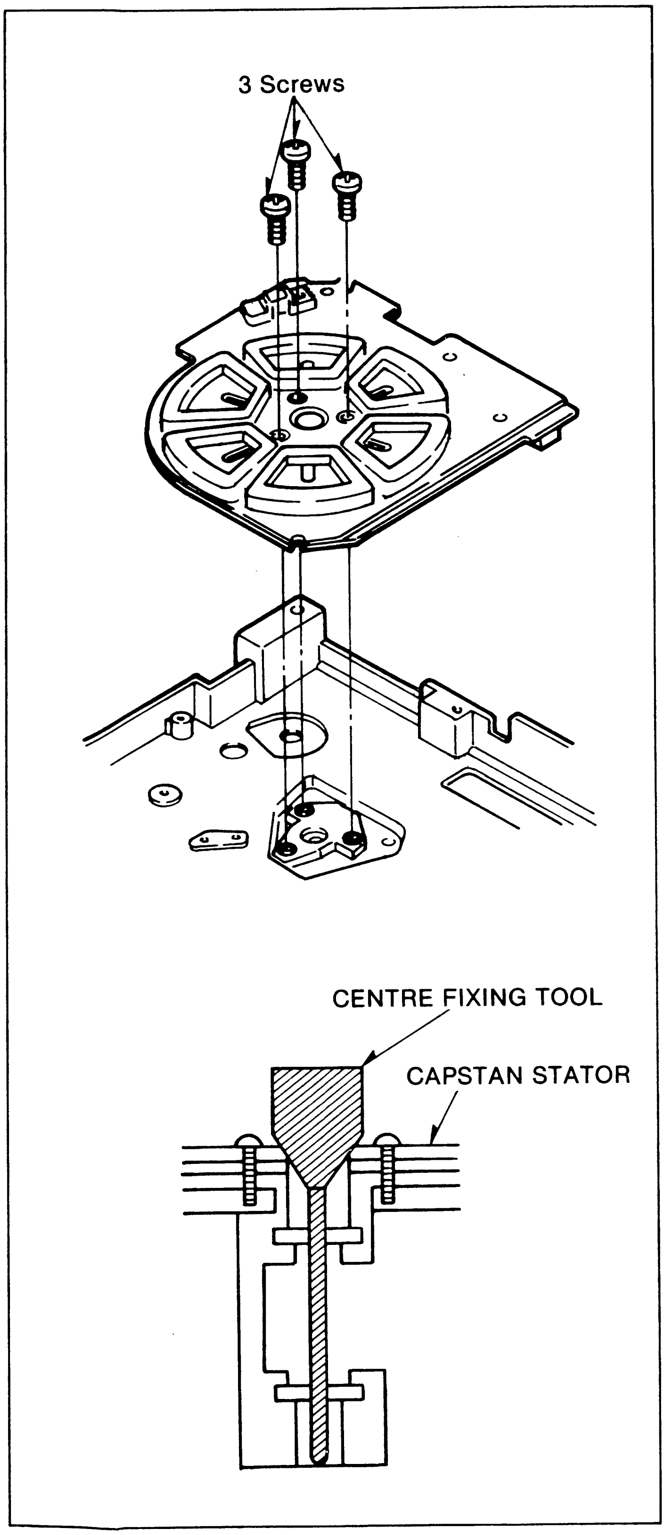


Fig. K4

2) Remove the oil seal from the ROTOR SHAFT Partially install the ROTOR SHAFT into the lower position and install the oil seal. Insert the ROTOR SHAFT further into the housing and install the second OIL SEAL in the upper position. Push the lower OIL SEAL down the ROTOR SHAFT into the housing.

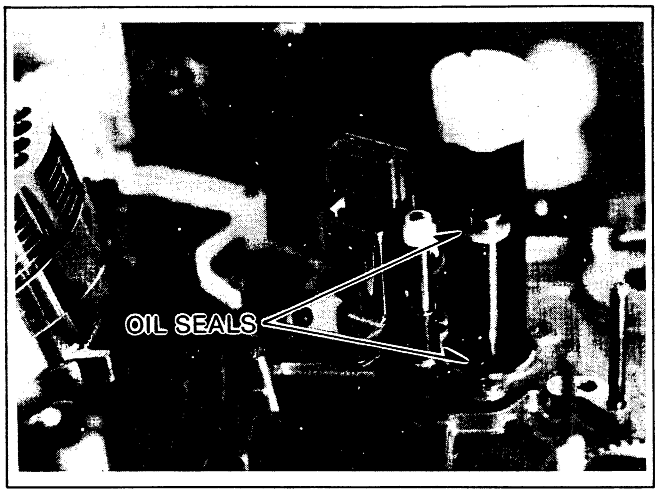


Fig. K5

3) Clean the ROTOR SHAFT after replacement. Reinstall the ROTOR STOPPER and the screw on the top side.

4-7. ASSEMBLY OF THE MAIN CAM GEAR

NOTE:

Before installing the MAIN CAM GEAR, set the CONNECTION GEAR so that the side of the gear with no teeth is towards the MAIN CAM GEAR.

1) Install the MAIN CAM GEAR so that the hole marker aligns with the SUB-CAM GEAR and insert the boss of the TAKE-UP TENSION REGULATOR ARM into the slot on the bottom of the MAIN CAM GEAR.

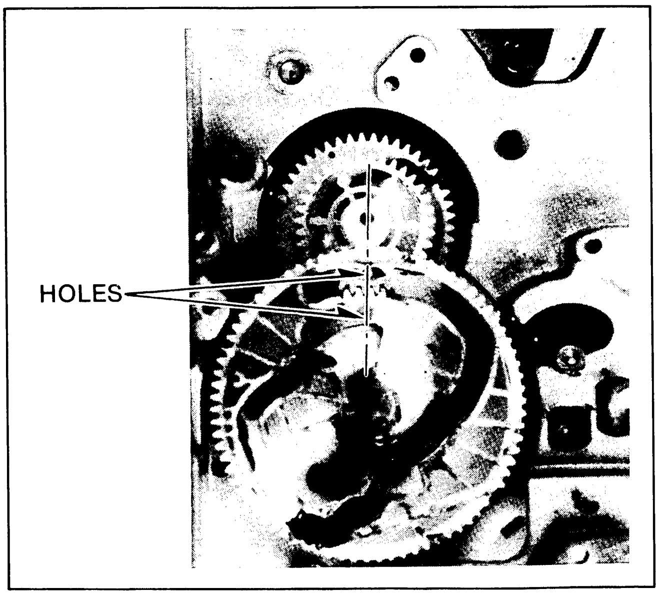


Fig. K6

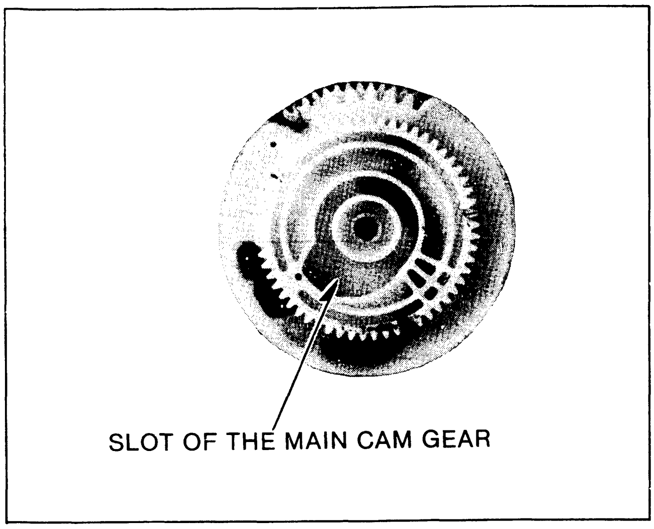


Fig. K7

4-8. ASSEMBLY OF THE MODE SW

1) Align the mark on the MODE SWITCH GEAR with the notch on the MODE SWITCH FRAME.
2) Install the MODE SWITCH taking care that all the phase alignments are correct. Check the CAM GEAR timing by rotating the MAIN CAM GEAR.
3) Install the screw(K) the retains the MODE SWITCH and ROTOR STOPPER.

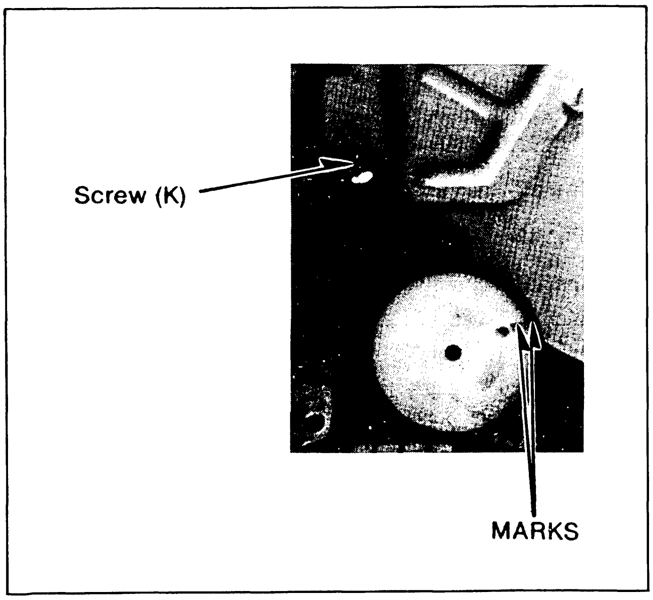


Fig. K8

4-9. ASSEMBLY OF THE T & S LOADING ARMS

1) Set the shaft holders to the unloaded position. Take care that the P5 POST does not interfere with the P3 Post or prevent it from going to the unloaded position. The TENSION ARM must be set to the position that will allow the P2 POST to move back to the unloaded position.
2) Install the TAKE-UP LOADING ARM and SUPPLY LOADING ARM, aligning the marks on the both GEARS.

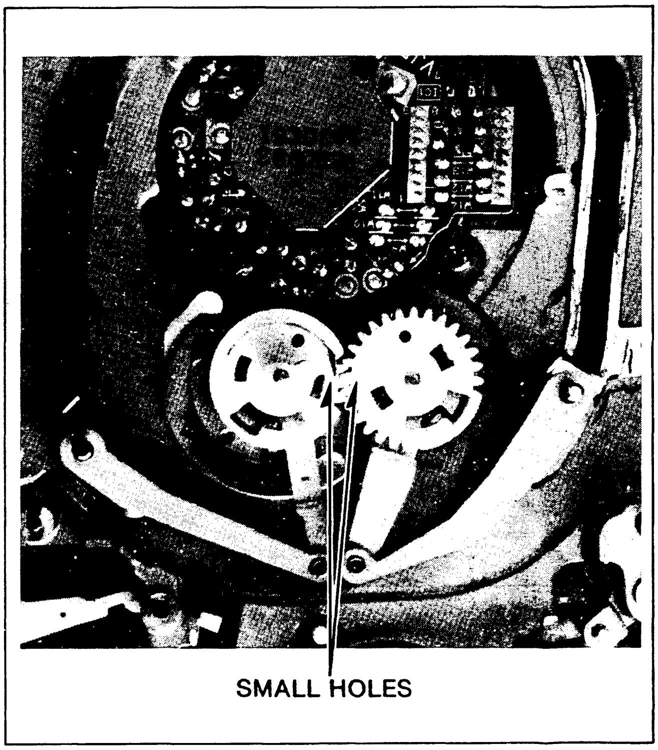


Fig. K9

4–10. ASSEMBLY OF THE MAIN LEVER

1) Install the MAIN LEVER ARM checking that the boss arms and shafts are in the correct position and the mark on the MAIN LEVER ARM is aligned with mark on the TAKE–UP LOADING GEAR.

2) Install the 3 cut washers.

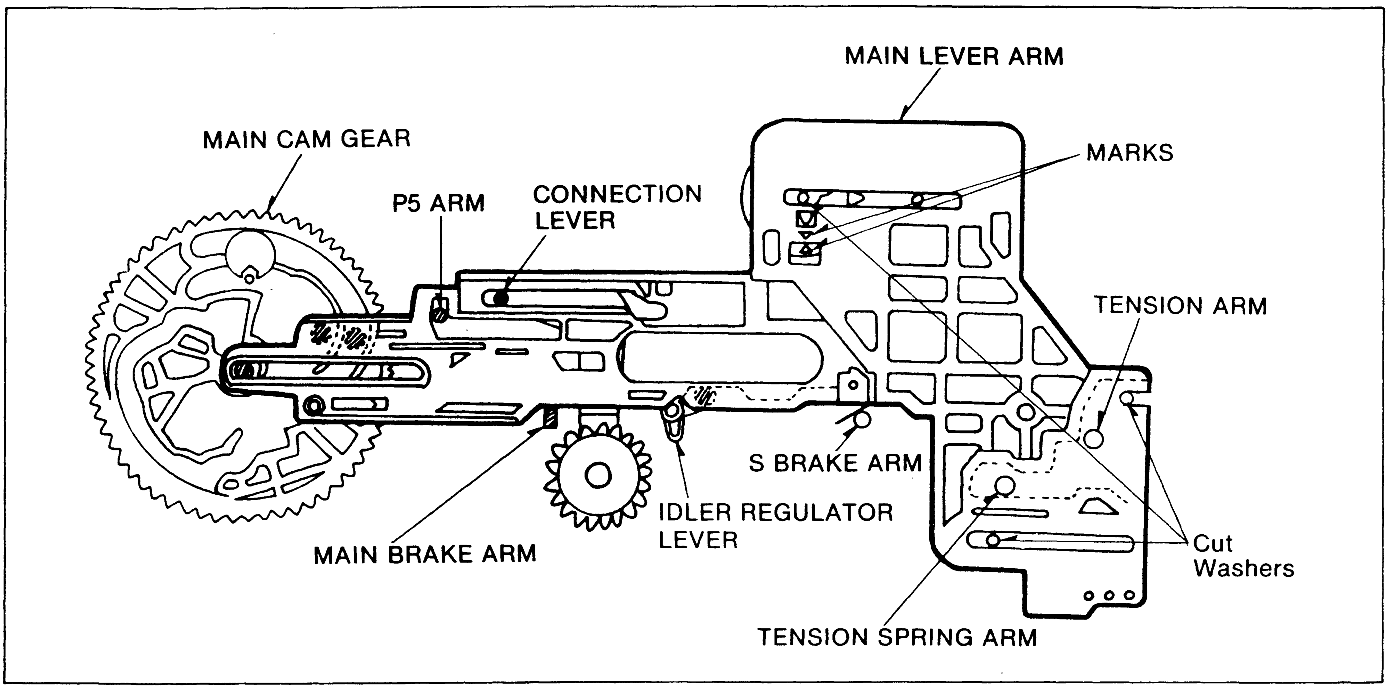

MAIN LEVER ARM
MAIN CAM GEAR
MARKS
P5 ARM
CONNECTION LEVER
TENSION ARM
S BRAKE ARM
IDLER REGULATOR LEVER
MAIN BRAKE ARM
Cut Washers
TENSION SPRING ARM

Fig. K10

4–11. ASSEMBLY OF THE WORM WHEEL GEAR & LOADING MOTOR BRACKET

1) Reinstall the WORM WHEEL GEAR.

2) Install the LOADING MOTOR BRACKET. First set the BRACKET over the MAIN CAM GEAR shaft and slide until it locks. Then push down on the BRACKET until the locking tab is connected to the chassis. Reinstall the screw(L).

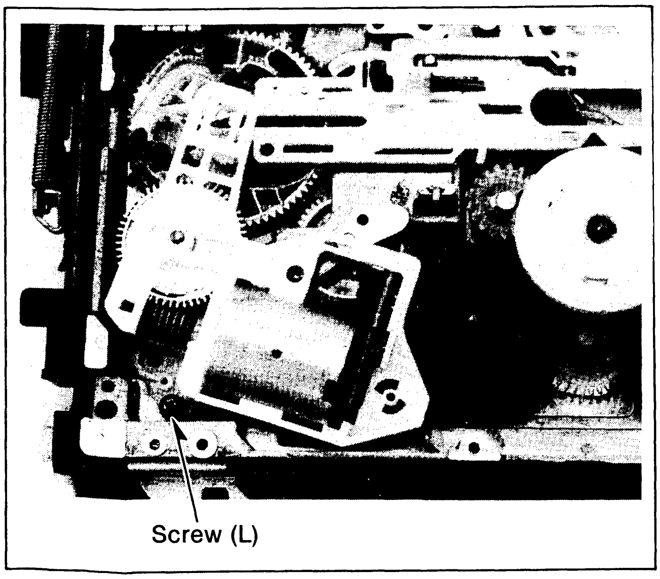


Fig. K11

4–12. ASSEMBLY OF THE TIMING BELT & SS BRAKE BASE

1) Install the TIMING BELT.

2) Put the TIMING BELT onto the TENSION ROLLER, slide the SS BRAKE BASE into position and install 2 screws(M).

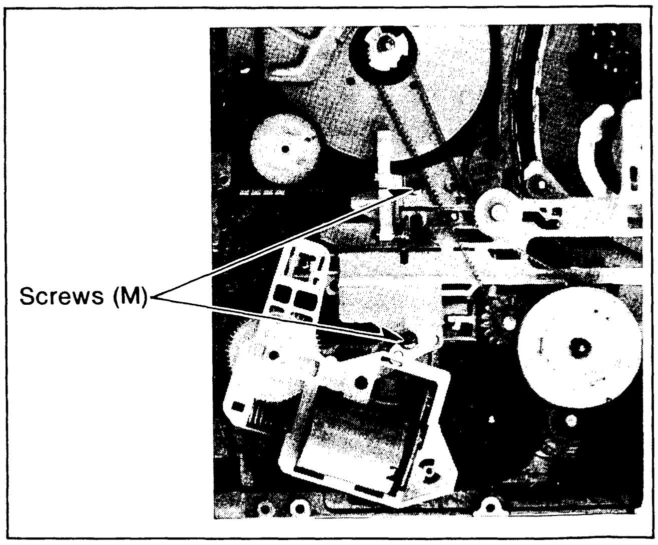


Fig. K12

4–13. ASSEMBLY OF THE PINCH ARM UNIT

1) Install the OPENER PIECE by inserting the boss into the PINCH ARM UNIT. Push down until the lock engages the shaft.

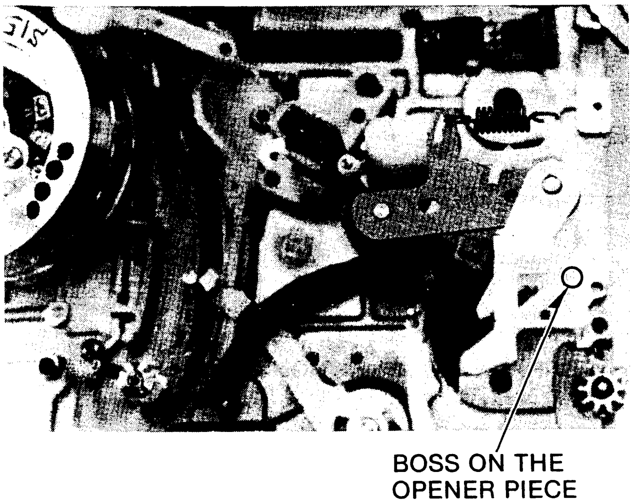


Fig. K13

4–14. CHECKING THE MECHANISM MOVEMENT

1) Check by moving the mechanism by hand then re–check using a battery to power the motor.
2) Rotate the LOADING MOTOR by hand in the loading direction while checking the movement of each gear. If the mechanism operates correctly when moved by hand, connect a battery to the LOADING MOTOR and re–check the movement of each gear as shown in Fig.S1/S2/S3.
3) Connect the battery to check the loading operation and then reverse the battery connection to check the unloading operation.
4) Reverse the battery to move the mechanism to the cassette down position.

4–15. ASSEMBLY OF THE CASSETTE HOLDER

1. A SSEMBLE A CASSETTE HOLDER AS A UNIT COMPLETE UNIT

1) Put the CASSETTE HOLDER into the cassette up condition by moving the WIPER ARM.
2) Turn the LOADING MOTOR by hand in the unloading direction until the CARRIAGE CONNECTION GEAR and the MODE SW is eject position as shown in Fig.K14/K15

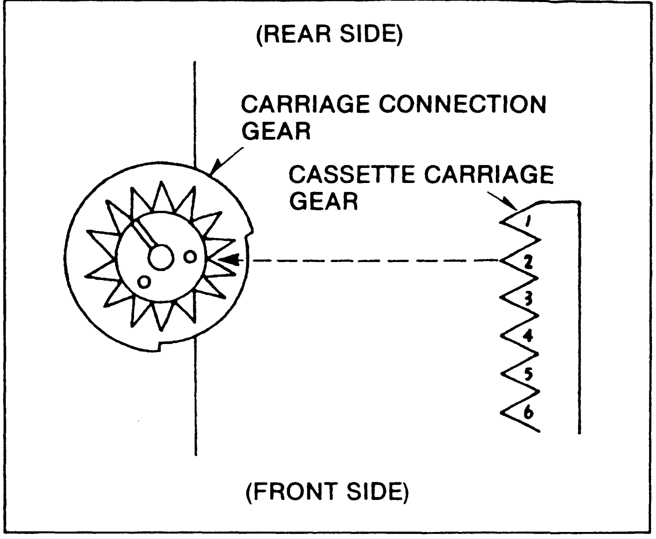


Fig. K14

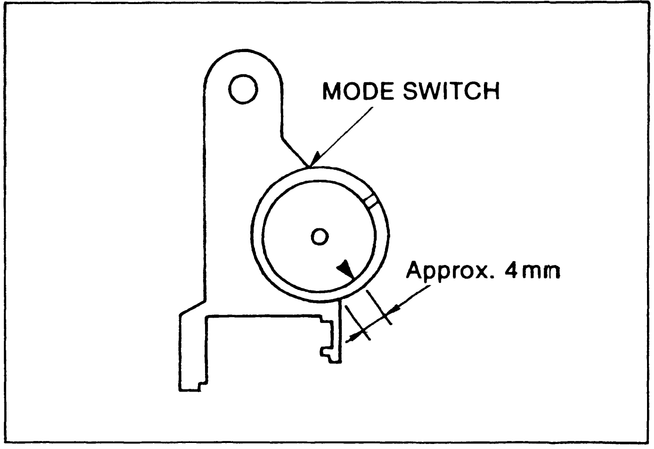


Fig. K15

3) Install the CASSETTE HOLDER UNIT as shown in Fig.K14.
4) Install 4 screws to attach the CASSETTE HOLDER UNIT.

<Eject Operation>

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear will not rotate.
For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate to the carriage connection gear by hand in the direction of the arrow.

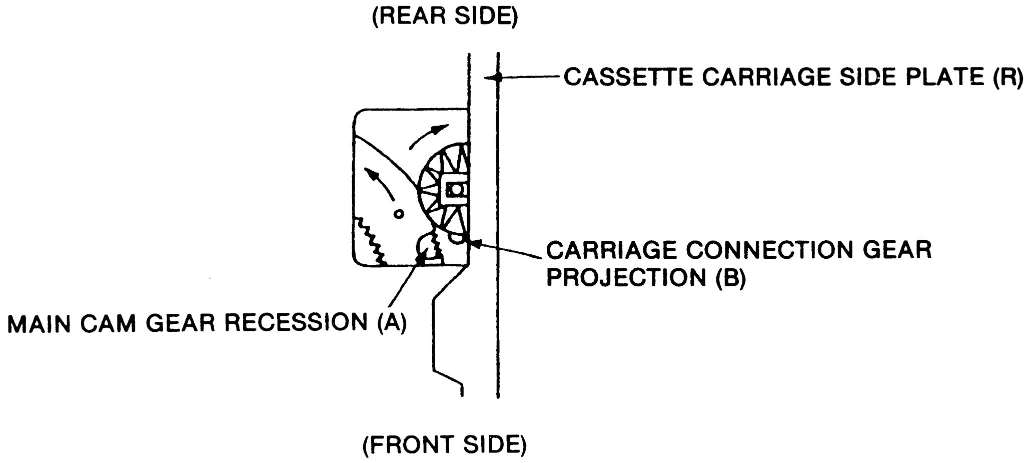

(REAR SIDE)
CASSETTE CARRIAGE SIDE PLATE (R)
CARRIAGE CONNECTION GEAR
PROJECTION (B)
MAIN CAM GEAR RECESSION (A)
(FRONT SIDE)

Fig. K16 Top View of Eject Operation

2. ASSEMBLE A CASSETTE HOLDER SEPARATELY

1) Put the CASSETTE HOLDER into the cassette down position by moving the WIPER ARM. Check the position of the WIPER ARM and RACK A. The mark of RACK A aligns with the mark on the WIPER ARM.

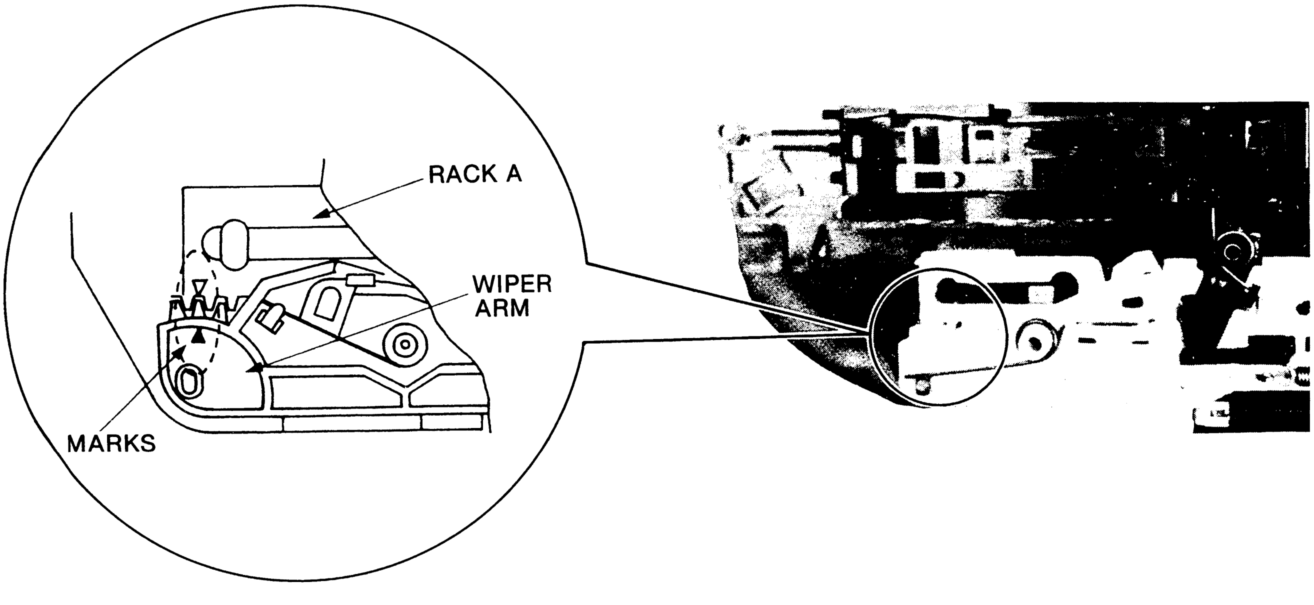

RACK A
WIPER
ARM
MARKS

Fig. K17

2) Install the SIDE PLATE ASSEMBLY so that the first gear of RACK B aligns with the mark on the CARRIAGE CONNECTION GEAR.

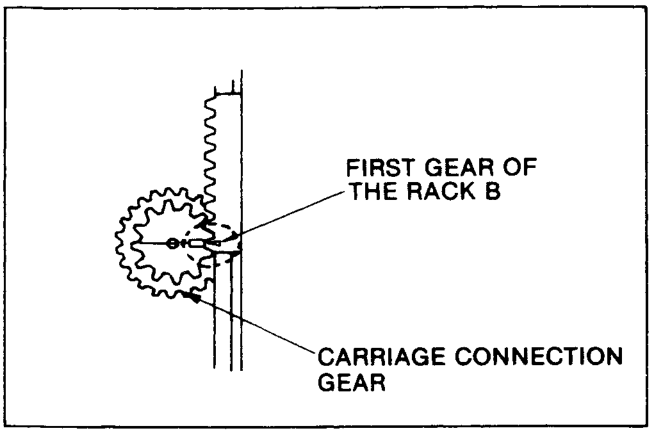


Fig. K18

3) Install 4 screws to attach the SIDE PLATE ASSEMBLY.

4) Turn the LOADING MOTOR by hand to the cassette up position while pushing the WIPER ARM to the cassette up position.

5) Insert the 5 posts on the CASSETTE HOLDER into the Side Plate.

6) Set the TOP PLATE on the Side Plate then push it down until it locks.

4-16. ASSEMBLY OF THE MECHANISM CHASSIS

1) Install the MECHANISM CONNECTION C.B.A. onto the chassis. Then install the chassis into the frame and connect all the cables and connectors.

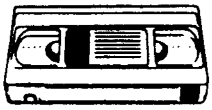
2) Clean the DD CYLINDER after reinstallation.

3) Insert a cassette and adjust the tape travel and check all the operation modes.

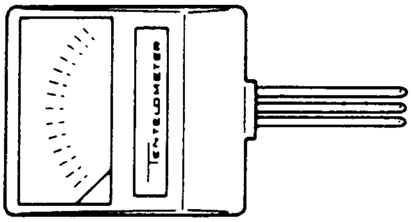
Servicing Fixtures & Tools

VFJ8125H3F
PAL VHS Alignment Tape

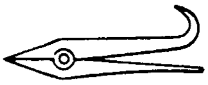
VFM8080HQFP
NTSC VHS Alignment Tape



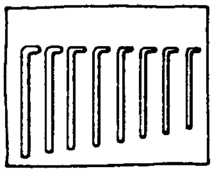
VFK0132
Back Tension Meter
(Tentelometer, Made in U.S.A.)



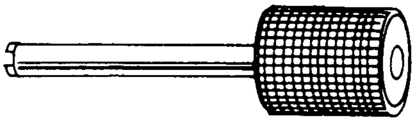
VFK0335
Retaining Ring Remover
(3mm/4mm)



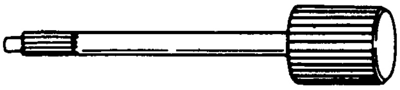
VFK0326
Hex. Wrench Set
(0.7, 0.9, 1.2, 1.5, 1.6, 2.0, 2.4, 3.0mm)



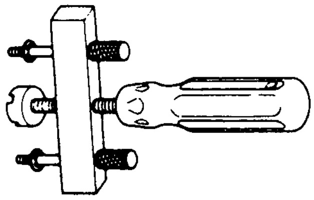
VFK0329
Post Adjustment Screw Driver



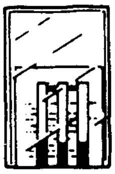
VFK0330
Fine Adjustment Gear Driver



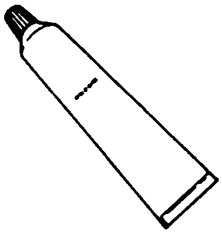
VFK0341
Upper Cylinder Remover



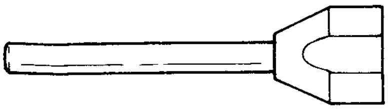
VFK27
Hand Cleaning Stick



MOR265
Morlytone Grease



VFK0851
CENTRE FIXING TOOL



5. PARTS CHANGE

5-1. Parts List

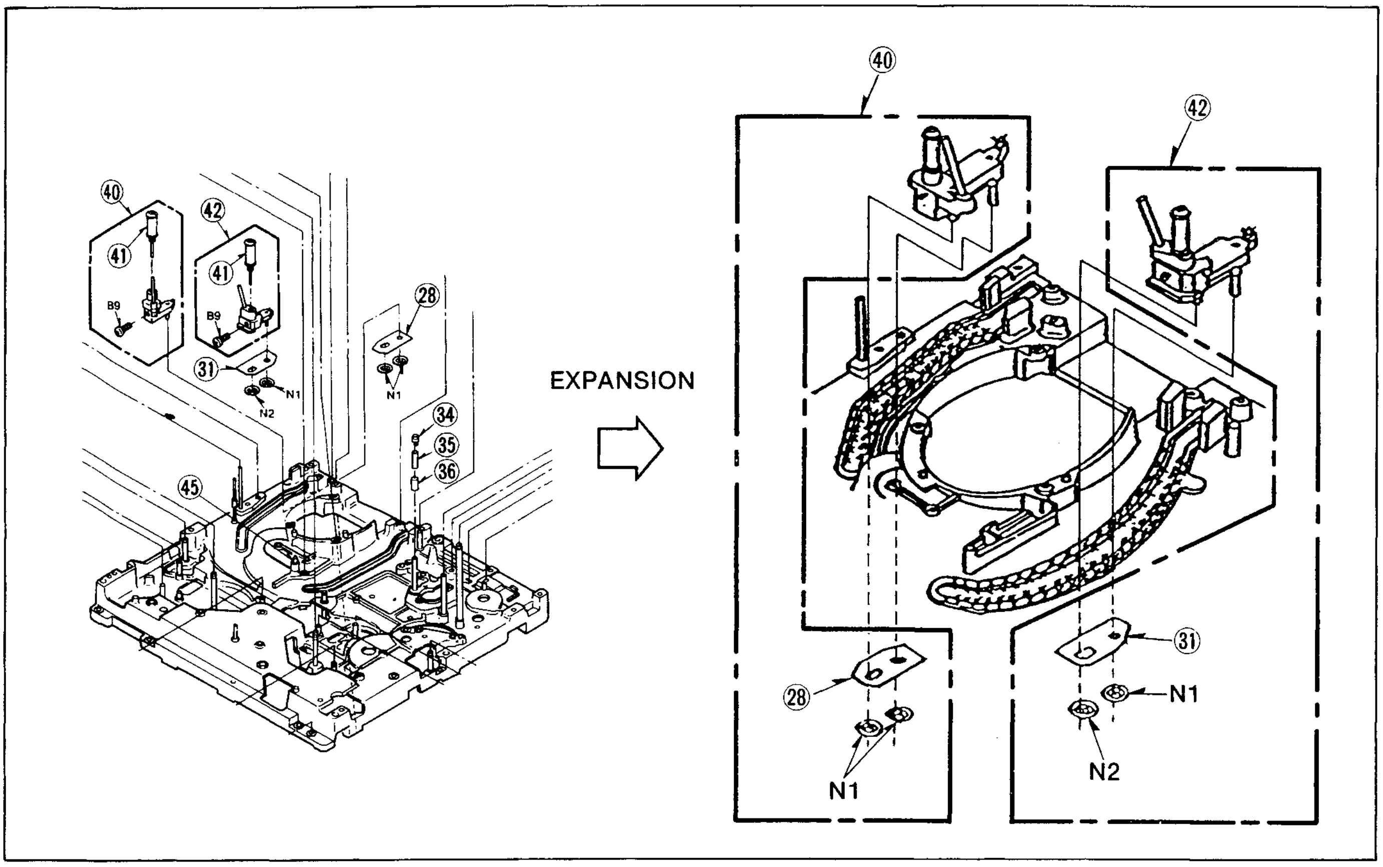
This list shows parts change for SUPPLE 1~3(SUPPLEMENT 1~3). When using or ordering the parts below, refer to this.

Note:(1)Parts indicated by " ▲ " do not have interchangeability.
(2)Parts indicated by " ● " should be used on New Part(SUPPLE1,2 or 3).

Ref.No.	Part Name	Original	SUPPLE1	SUPPLE2	SUPPLE3	
20(1)	A/C HEAD(1) UNIT	VED0182	VED0205			
28(1) ●	INCLINED BASE HOLDER(S)	VMD1937	VMA8874			
31(1) ●	INCLINED BASE HOLDER(T)	VMD1959	VMA8873			
32(1) ●	OPENER PIECE	VMD1960	VMD2101			
37(1)	TENSION RELEASE ARM	VML2772	-------			
40(1) ●	INCLINED BASE(S) UNIT	VXA4801	VXA4982KIT			
40(1) ●	INCLINED BASE(S) UNIT	VXA4982	VXA4982KIT			
41(1) ●	ROLLER POST	VXP1363A	VXP1415			
42(1) ●	INCLINED BASE(T) UNIT	VXA4803	VXA4984KIT			
42(1) ●	INCLINED BASE(T) UNIT	VXA4984	VXA4984KIT			
43(1)	ROLLER POST(T)	VXP1363	-------			
45(1) ●	CASSETTE POSITION FIXTURE	VMS2558	VMS5383			
N1	PUSH HOLDER	-------	VHN0192			
N2	PUSH HOLDER	-------	VHN0193			

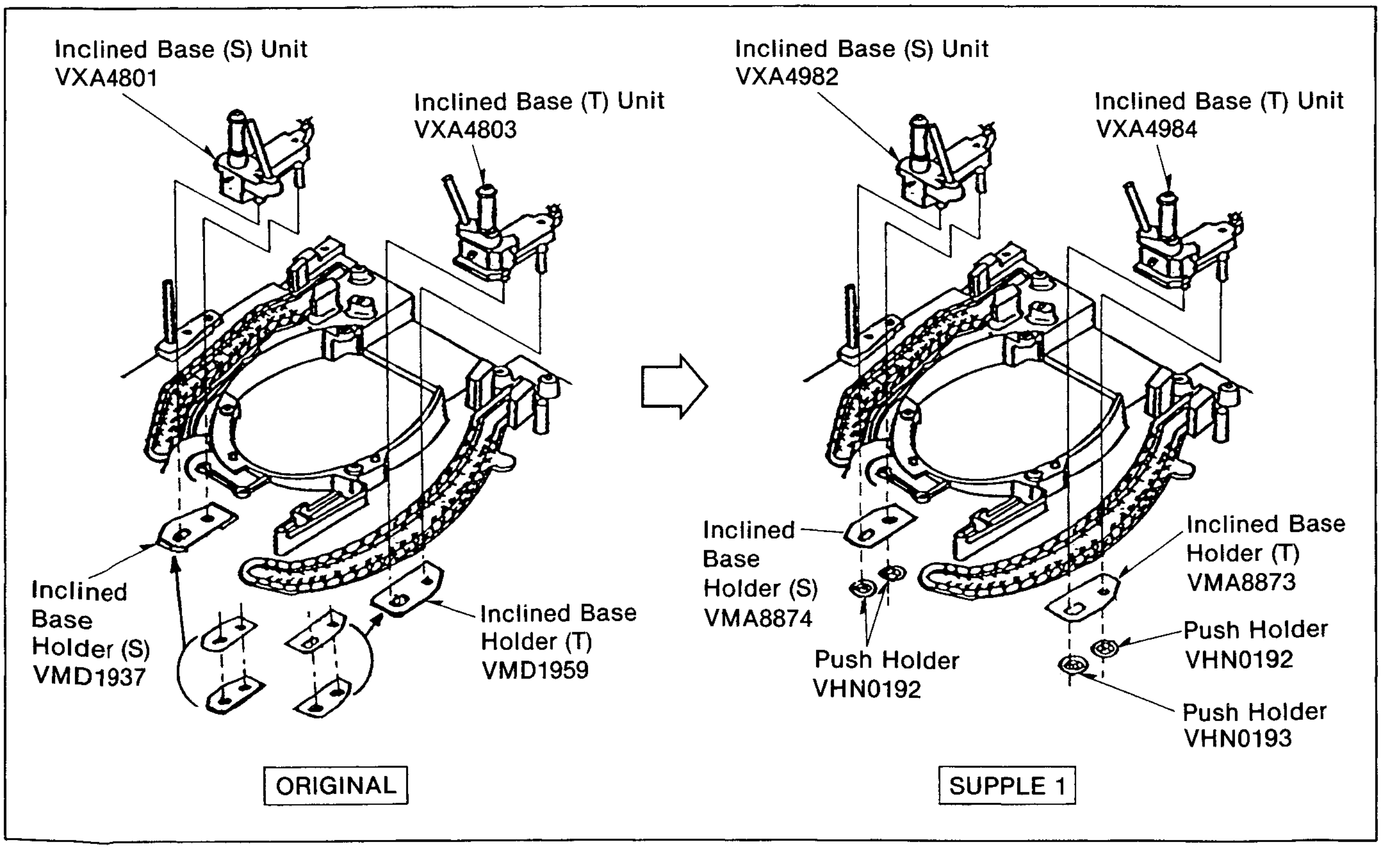
SUPPLE1(SUPPLEMENT SERVICE MANUAL) ··· Order No. VRD9305S015

5-2. Exploded Views of Inclined Base (S),(T) Unit



40
41
B9
42
41
B9
31
N1
N2
28
N1
34
35
36
45
EXPANSION
40
42
31
N1
28
N2
N1

5-3. Inclined Base (S),(T) Unit Changes



Inclined Base (S) Unit
VXA4801
Inclined Base (T) Unit
VXA4803
Inclined Base Holder (S)
VMD1937
Inclined Base Holder (T)
VMD1959
ORIGINAL
Inclined Base (S) Unit
VXA4982
Inclined Base (T) Unit
VXA4984
Inclined Base Holder (S)
VMA8874
Push Holder
VHN0192
Inclined Base Holder (T)
VMA8873
Push Holder
VHN0192
Push Holder
VHN0193
SUPPLE 1

6. TROUBLE SHOOTING

SYMPTOM	CAUSE/*CHECK POINT
NO SOUND IN SELF RECORD	REPLACE A/C HHEAD *IC600(34)(35) ⇨ OK
TAPE STUCK WHEN EJECTED	TAKE UP BRAKE ARM UNIT(VXZ0313) OFF *TAKE UP REEL NOT ROTATING
NOISY PICTURE IN PLAYBACK	DD CYLINDER CUT LEAD OF LOWER CYLINDER(VEG0987) *RF ENVELOPE DOESN'T APPEAR
CASSETTE BLINDER DOESN'T CLOSE	PHASE ERROR BETWEEN SIDE PLATE & CARRIAGE CONNECTION GEAR(VXA4806 & VDG0871) *VISUALLY CHECK
BAR NOISE IN PLAYBACK	DUST IN INCLINED BASE(VXA4801) *P.B PRE-RECORDED TAPE ⇨ NG SELF-RECORDED TAPE ⇨ OK
NOISY PICTURE IN SELF-REC/P.B	A/C HEAD IS DIRTY *NO CONTROL PULSE
TAPE CHEWED	P5 ARM UNIT BENT, BROKEN P5 STOPPER (VXL2306, VXA2229) *VISUALLY CHECK
THE TAPE DOESN'T LOAD	IDLER CONTROL LEVER(VML2725) NOT INSTALLED CORRECTLY
TAPE RUNNING NOISE WHEN FF	IDLER ARM(VXL2229)

SYMPTOM	CAUSE/*CHECK POINT
NOISY PICTURE IN SELF-REC/P.B(LP)	A/C HEAD DIRTY *NO CONTROL PULSE
TAPE EJECTED INSTANTLY AFTER INSERTING	PHASE ERRER BETWEEN SIDE PLATE & CARRIAGE CONNECTION GEAR(VXA4806 & VDG0871) *VISUALLY CHECK
UNIT IS IN CUE MODE WHEN PLAY BUTTON PRESSED	INCLINED BASE(S), VXA4801 NOT COMPLETELY LOCKED *GREASE TO V STOPPER AND INCLINED BASE
CAN NOT INSERT TAPE	BROKEN HOLDER PLATE LEVER(VXA4661)
TAPE DAMAGE	REPLACE PINCH ROLLER(VXA2246)

Order No. *VRD9305S015*

Service Manual

Video Product

Model No. *All K-Mecha. Models*

Supplement

Effective from: *Mentioned in Remarks*

Subject: *Change of K-Mecha. Parts*

Please use this manual together with the Service Manual
Model No. *All K-Mecha. Models*

The following Parts have been changed to improve the performance of K-Mechanism.

INTERCHANGEABLITY CODE See the I/C column on the following Part Number list													
A	Parts	Prdctn	B	Parts	Prdctn	C	Parts	Prdctn	D	Parts	Prdctn	E	Addition
	Orgnl	Early		Orgnl	Early		Orgnl	Early		Orgnl	Early	F	Deletion
	New	Late		New	Late		New	Late		New	Late	G	Other

Parts Number List

Ref. No.	Original Part NO.	New Part No.	Part Name & Description	I/C	Remarks
20(1)	VED0182	VED0205	A/C HEAD(1) UNIT	A	Running Change
28(1)	VMD1937	VMA8874	INCLINED BASE HOLDER(S)	C	First Production
31(1)	VMD1959	VMA8873	INCLINED BASE HOLDER(T)	C	First Production
32(1)	VMD1960	VMD2101	OPENER PIECE	C	First Production
37(1)	VML2772	-------	TENSION RELEASE ARM	F	First Production
40(1)	VXA4801	VXA4982KIT	INCLINED BASE(S) UNIT	C	First Production
40(1)	VXA4982	VXA4982KIT	INCLINED BASE(S) UNIT	C	First Production
41(1)	VXP1363A	VXP1415	ROLLER POST	C	First Production
42(1)	VXA4803	VXA4984KIT	INCLINED BASE(T) UNIT	C	First Production
42(1)	VXA4984	VXA4984KIT	INCLINED BASE(T) UNIT	C	First Production
43(1)	VXP1363	-------	ROLLER POST(T)	F	First Production
45(1)	VMS2558	VMS5383	CASSETTE POSITION FIXTURE	C	First Production
N1	-------	VHN0192	PUSH HOLDER	E	First Production
N2	-------	VHN0193	PUSH HOLDER	E	First Production

(*)Refer to the Exploded View on the other
side of this page.

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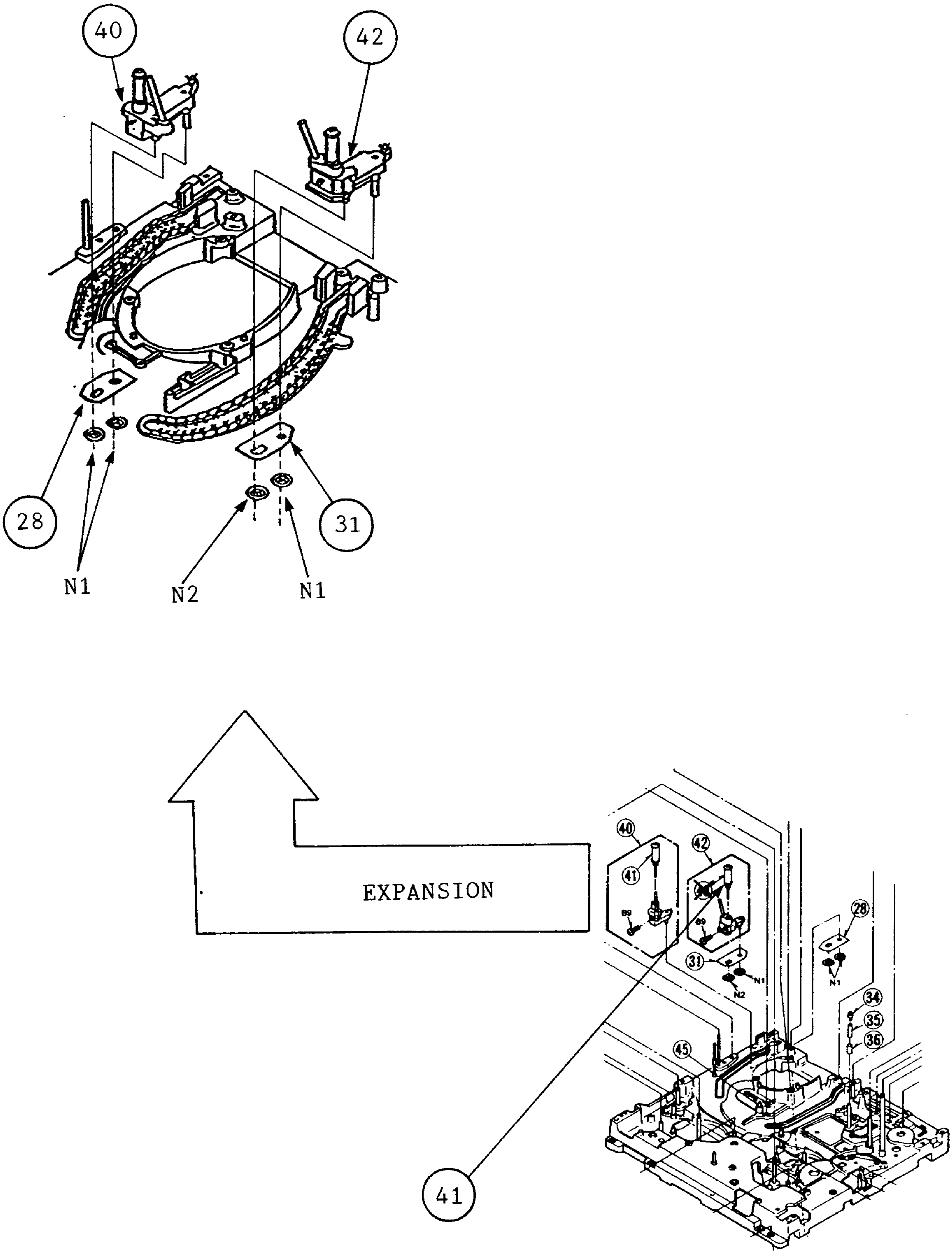
[Exploded Views of Inclined Base(S),(T) Unit]


40
42
28
31
N1
N2
N1
EXPANSION
40
41
42
B9
B9
31
N1
N2
28
N1
34
35
36
45
41

Order No. VRD9605S018

Service Manual

Supplement

Effective from: First Production

Video Product

Model No. ALL G-MECHANISM
ALL K-MECHANISM

Subject: Capstan FG Adjustment

Please use this manual together with the Service Manual for Order No.
Model No.

CAPSTAN FG ADJUSTMENT

(Equipment Required)
Fine Adjustment Gear Driver(VFK0330)
(Specification)
G-Mechanism:0.16+-0.04mm
K-Mechanism:0.15+-0.04mm

1. Slightly loosen screw for FG Head and set the Fine Adjustment Gear Driver into the hole(A).
2. Turn the Fine Adjustment Gear Driver counter-clockwise until the FG Head touches the rotor.
   Then turn it slightly clockwise to the clearance as specified.
3. Tighten screw for FG Head.

Note:
Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet.

(Confirmation)
1)Record the video signal in LP(PAL)/SLP(NTSC) mode.
2)Measure the output of FG1 and FG2 which supplied from Capstan Stator Unit.
3)Confirm that the signal is more than 30mVp-p (G-Mech)/20mVp-p(K-Mech) as shown in Fig.CF2.

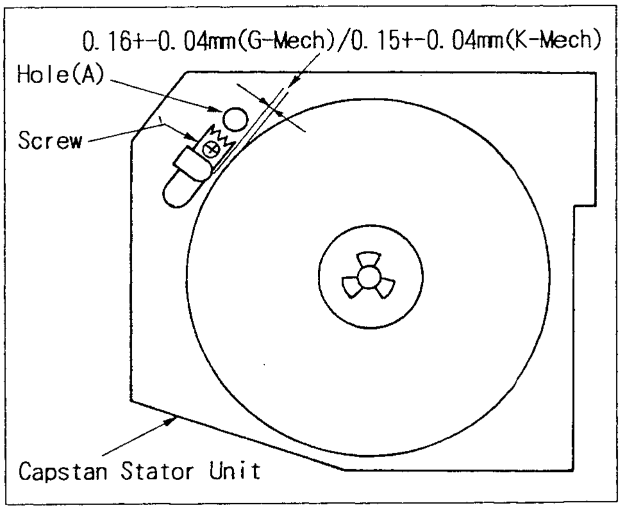


Fig.CF1

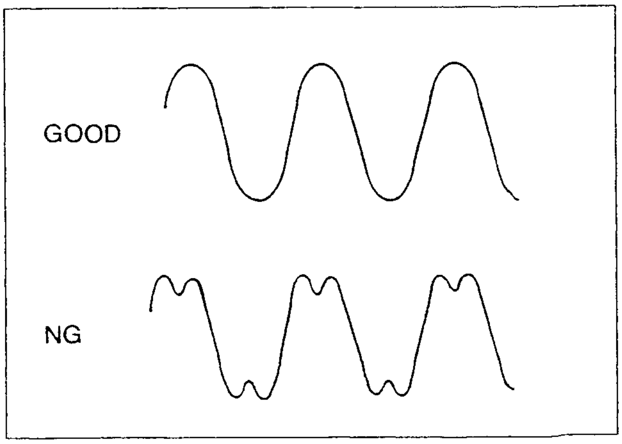


Fig.CF2

⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Printed by: Schaltungsdienst Lange, Berlin (Germany)